16: Great Britain G-4 (no date) 1943 EDI Rumania EDI

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RUMANIA

ECONOMIC SURVEY

The information contained herein is believed to be correct as at September 1st, 1943

[Title Page]

TABLE OF CONVERSIONS

To Change	*To*	*Multiply by*
centimetres	inches	·394
metres	feet	3·281
metres	yards	1·094
kilometres	miles	·621
inches	centimetres	2·540
feet	metres	·305
yards	metres	·914
miles	kilometres	1·609
hectares	acres	2·471
sq. kilometres	sq. miles	·386
acres	hectares	·405
sq. miles	sq. kilometres	2·590
grammes	ounces	·035
ounces	grammes	28·350
kilogrammes	pounds	2·205
pounds	kilogrammes	·454
long tons	metric tons	1·016
metric tons	long tons	·984
litres	pints	1·760
pints	litres	·569
litres	gallons	·220
gallons	litres	4·546
Fahrenheit	Centigrade	subtract 32 and × 5/9
Centigrade	Fahrenheit	× 9/5 and add 32

Rough Approximations

10 cms.	= 4 inches		1 hectare	= 2½ acres	
11 metres	= 12 yards		5 kgs.	= 11 lbs.	
8 kms.	= 5 miles		1 litre	= 1¾ pints	
50 kms.	= 31 miles		1 hectolitre	= 22 gallons	
26 sq. kms.	= 10 sq. m.		metric ton	= 2,205 lbs.	

Temperatures

212° F = 100°C.
98·6° F = 37°C.
32° F = 0°C.

NOTICE

This Survey has been prepared by the Ministry of Economic Warfare and all enquiries for further information, and any suggestions should be directed to—

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NOTE

UNLESS "LONG" TONS ARE SPECIFICALLY STATED IN THE TEXT, ALL WEIGHTS GIVEN ARE IN METRIC TONS. "TONS" MEAN METRIC TONS, NOT ENGLISH LONG TONS.

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PART II

INTRODUCTION

241 The basis of Rumanian economy is agriculture in that some 80 per cent. of the population derive their livelihood from the land and agriculture provides a high proportion of the national income. [315] During recent years, however, the expansion of the oil industry has meant that agricultural pro- [439] duce has played a decreasing part in the country's exports, having been superseded by oil, exports of which amounted to 43 per cent. of the total export trade in 1938, compared with 19 per cent. in 1927; while grain exports in 1938 represented 23 per cent. compared with 46 per cent. in 1927.

In spite of the importance of agriculture to national prosperity farming methods are backward and per acre crop yields are among the lowest in Europe. Attention is particularly given to growing cereals, and of these maize is the chief, [231] providing a large surplus for export (apart from the war years). Livestock density is low, which is one of the weaknesses of Rumanian agriculture, the Banat being the only district in which numbers [439] are fairly high, and farming approaches the intensive system. It must be stressed that the relatively large export surplus, which consists of wheat, maize, barley, oilseeds and pulses, live- stock, oilcake, etc., is only made possible by [146] the very low nutritional level which prevails, and that if this were raised to anything like western European standards exports would be commensu- rately reduced.

248 Since the war more attention has been paid to 249 the growth of industrial crops such as sunflower, soya, cotton, hemp and flax, and the cultivation of rubber-bearing plants has been started following the finding of the *Kok Saghys* plant left by the Russians in Bessarabia. Though some success has been achieved in increasing the areas under textile fibres, and yields have been slightly higher, the hoped for increases in soya and sunflower cultivation have not been achieved due to un- favourable weather conditions and to general wartime dislocation.

313 Rumania's forest resources, though extensive, have suffered severely from a consistent policy of over-exploitation, and, while providing the basis of a fairly important industry during the period between the two wars, have been so depleted that cutting will have to be very restricted for a number of years if they are to be allowed to recover. The loss of Northern Transylvania has affected the timber industry in particular, as a high proportion of the forest resources were located there, and in that district this industry was better developed than elsewhere in the country.

IMPORTANCE OF OIL

315 Oil plays a major part, not only in Rumania's foreign trade, but also in covering her domestic fuel requirements, to a large extent replacing coal, reserves of which are small and of low quality. Since the war and the resulting pressure which Germany has exerted to obtain increased quantities of oil for her armies, (combined with the consistent drop in the rate of production be- tween 1936 and 1941), serious attempts have been made to find alternative sources of fuel. The enormous reserves of natural gas existing in Transylvania, which were exploited only very slightly before the war, are being used increasingly as a source of fuel to supply local industries, and a

315 pipeline has been completed from a secondary source of supply at Mănești to convey this gas to Bucarest to supply both household and industrial requirements.

135 Iron-ore deposits are small, so that the heavy industries are very largely dependent on imports. A variety of other mineral resources, which are believed to exist in greater abundance than has so far been established, have not yet been fully surveyed.

433 Rumania has a poorly-developed industry, which lags far behind that of western European countries such as Czechoslovakia, though is ahead of all the other south-east European countries, except Hungary. Financially she is a poor country, with very limited capital resources, which has proved a severe hindrance to industrial development and has laid her open to the investment of foreign capital, which has been attracted particularly by the rich mineral oil and forest resources. Skilled labour, also a vital factor in the process of industrialisation, has been lacking, so that the use of foreign technicians has been essential. Other raw-material resources, though adequate to allow the development of a sound and varied industry, are not sufficiently extensive to encourage a very rapid development independent of imported raw materials.

[457]
[464]

Industrialisation in Rumania did not start until about 1890, and the period of greatest expansion was between 1929 and 1938. The consumption industries were the first to be developed, and of these food industries are the chief, the raw materials being grown on the spot. The growth of such industries as paper, cardboard, printing, soap, chemicals and furniture, etc., followed. The location of industry in the earlier stages was governed not by such factors as the existence of cheap labour, but was built up in those areas richest in raw materials.

MAIN INDUSTRIAL REGIONS

[311] The main industrial region is in the Prahova valley, where the oilfields are to be found, followed by the Reșița district, where the existence of iron ore, coal, manganese, etc., led to the development of metallurgical and engineering facilities, as well as of such auxiliary industries as coal and wood distilleries. Gold, silver, lead, zinc and copper deposits in the Baia Mare region formed the basis for the erection of both metal and chemical factories. The presence of methane gas, salt, gold, silver and stone quarries in and around Turda determined the location of factories for production of cement, limestone, bricks, tiles, porcelain, glass, sulphuric acid, etc. In the rich forest districts of Ferdinand, Nadrag and Hunedoara, where iron ore deposits are also to be found, blast furnaces and metallurgical industries have been established. The textile industry is mainly established in Cisnădia, Piatra Neamț, Bacău and Buhuși. Apart from the regions mentioned, industry is centred in the principal towns—Bucarest, Timișoara, Brașov, Sf. Gheorghe, Arad, Galați, Brăila, Cernăuți, Cluj and Iași.

The following table gives an idea of the relative importance of the various industries, showing the amount of capital invested and value of production in each of the main groups, and also the number of factories and of personnel employed :—

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INTRODUCTION

433

THE MANUFACTURING INDUSTRIES IN 1938

Industry	No. of enterprises	Invested Capital in million lei	Personnel (including workers and managing staff)	Production in million lei
Food	974	10.773·0	38.400	15.577·4
Textiles	640	8.230·3	74.100	14.691·9
Chemicals	397	12.325·3	28.300	14.154·6
Metallurgy	366	8.466·4	51.300	11.362·8
Timber	713	2.273·6	43.300	3.583·5
Leather	158	1.025·3	13.400	3.437·5
Paper	157	3.577·4	15.200	3.088·5
Building materials	258	2.493·4	15.100	1.959·6
Electro-technics	31	199·8	2.700	674·6
Glassware	30	501·4	5.700	527·1
Pottery	34	143·3	1.700	148·9
Total	3.767	50.069·2	289.200	69.206·4

[40]

RUMANIA AS A GERMAN ALLY

648 433 To Germany Rumania has been an invaluable if expensive ally—invaluable mainly for her oil production, which accounts for one-third of total Axis supplies; expensive because, in order to exploit the country's usefulness to the full, it has been necessary to provide goods, such as oil-well equipment, agricultural machinery, machine tools, etc., all of which she can ill spare on account of the need for them both in her own country and for supply to her other satellites. To ensure smooth working of the oil-well region German troops have been established in the Ploești district. Apart fom oil German expectations have come to very little in Rumania—her demands for cereals, soya beans, sunflower-seed, etc., have not been fulfilled due to bad harvests, labour shortage and peasant hoarding, and livestock deliveries have been affected by fodder shortage and illegal slaughterings.

As to further German demands on Rumanian economy, the most outstanding were for manpower in the form of troops for the Eastern front, and the use of the country for transit of troops and war materials to the battle zones. Both these facilities have been of considerable material value to the enemy, though in order to make use of Rumanian troops Germany has had to provide the bulk of the equipment, as Rumanian industry is not adequate to supply more than the barest minimum; and even where she has the available facilities, raw materials are lacking.

[489] To exploit the country successfully from the transport angle it has been necessary to set up a control organisation to direct transit traffic, and, in addition, to supply and repair locomotives and rolling stock.

GERMAN PENETRATION

648 439 For a great many years, Germany has been the natural supplier of engineering and consumption goods which Rumania was unable to produce for herself, and has provided a ready market for her surplus agricultural produce. Following the coming into power of the Nazi Government, Germany succeeded in acquiring Rumanian trade to an increasing extent at the expense of other countries. With the outbreak of war, Rumania has become even more dependent on Germany as a supplier of manufactured goods in general, and iron and steel products in particular.

648
439

In 1940 an economic agreement was signed between the two countries, by which in exchange for raw materials a ten-year plan for the development of Rumanian economy was formed. Germany agreed to the following main conditions :—

(1) The granting of extensive long-term credits.

(2) The supply of tools and machines for agricultural development.

(3) The provision of technical and financial aid for industry.

(4) The provision of extensive supplies for the development of the transport system.

(5) To put technical experts at Rumania's disposal.

(6) To make capital available for the development of industry and the banking system.

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471

Germany has exploited Rumania's dependence on her to the full by providing the minimum of goods, so that she owes her an ever-increasing sum in the clearing. German financial interests have gained tremendous impetus since the removal of British and American competition, together with the acquisition of the actual interests of occupied countries, such as France, Holland, and Czechoslovakia. To cite the most important example, in the oil industry German capital has increased from 0.5 per cent. of total investments in 1939 to about 38 per cent. in 1942, while in the heavy industry the Hermann Goeringwerke have achieved a footing in the main engineering firms of Reşiţa and Malaxa, as well as in the aircraft industry and in the shipbuilding yards at Galaţi. The motor-vehicle assembly industry is almost entirely in the hands of the German companies, and German capital is to be found in the banks, in the timber and textile industries, in a number of transport and trading companies, and behind the attempted expansion of the mineral resources.

ITALIAN PENETRATION

There is also some considerable Italian financial penetration in Rumanian industry, though on nothing like the same scale as German; it is mainly confined to the oil, building, timber and textile industries and to various cereal export companies.

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TERRITORIAL LOSSES

728 In 1940 Rumania suffered serious loss of territory. First in August, Bessarabia and the Northern Bucovina were occupied by the Russians, then a few weeks later Northern Transylvania was given to Hungary by the Vienna Award, following which the Southern Dobruja was ceded to Bulgaria by the Treaty of Craiova. However, in 1941, Bessarabia and Northern Bucovina were regained, so that the loss of these territories was of only temporary significance.

[131] [161]

Territory	*Area sq. km.*	*Population in millions*	*Date of Loss*
Bessarabia and Northern Bucovina	50,000	3.3	*August*, 1940
Northern Transylvania	43,700	2.75	*Sept.*, 1940
Southern Dobruja	7,700	0.38	*Sept.*, 1940

The temporary loss of Bessarabia and Northern Bucovina had serious repercussions on the economic situation of the country, which were of wider effect than might be supposed from the limited time of the annexation, because of the loss of the harvests of both 1940 and 1941, the "scorched earth" policy of the Russians and the dislocation of the transport system caused by the necessary re-conversion to standard European gauge from the Russian gauge.

The cession of Northern Transylvania, apart from the mere physical loss of territory and population, caused a severe disruption of the economic system on account of the valuable raw materials involved, and the loss of industry which had been built up on the basis of these raw materials. The capital invested in industry in this area represented some 13 per cent. of total investments in industry in the whole country. The main features were the mineral resources of the Baia Mare district, containing lead, zinc, gold, silver and small quantities of copper, with lead-refining plants attached. In this area deposits of pyrites were fairly considerable and supplied the bulk

728 135

728 of requirements for sulphuric-acid production.
[135] Of lesser importance were the salt and coal deposits.

[313] The forest resources of Northern Transylvania are estimated to have accounted for as much as 25 per cent. of pre-war timber production. Apart from timber the food and leather industries appear to have been the most developed. This
[311] area was principally made up of forests and pastures; the arable land provided no surplus
[933] after local needs had been covered. Of livestock losses the most outstanding feature was nearly 2 million sheep.

[496] The railway system, and particularly the railway administration, was severely handicapped by the change of frontiers, which in places cut one part of Rumania off from the other.

Caliacra and Durostor, the two ceded Dobrujan provinces, are mainly agricultural, and though producing a small surplus, contributed little to Rumania's total agricultural output. Of more significance is the cotton-growing area. There are no known mineral deposits, and industry in this area is on a very small scale, relying mainly on handicrafts.

TRANSNISTRIA

727 Transnistria is the name which has been given to the territory lying between the Dniester and the Bug, which was given to Rumania to administer in 1941 subsequent to its capture from the U.S.S.R. by Rumanian and German troops. Transnistria is part of the Southern Ukraine and is mainly agricultural, while such industry as existed has been of no use to the Rumanians on account of the heavy destruction carried out by the Russians. It is probably true to say that this territory has been more of a financial liability than an asset to Rumania on account of the heavy expenditure entailed in repairs, particularly of railways and bridges. Some little advantage has, however, been gained from the harvest of 1942–3.

CHAPTER I

FOOD AND AGRICULTURE ooo

A. PRE-WAR CONDITIONS

1. General

241 Agriculture occupies about 80 per cent. of the population of Rumania and contributes the greater part of the national income: but, owing to the importance of the country's mineral-oil [439] production, exports of agricultural products accounted for rather less than half of total exports by value, in the immediate pre-war years.

Total agricultural production, even if there were no exports, would fall seriously short of the real [146] food needs of the country. The poorest are actually underfed, while the majority of the remainder subsist on a diet which, though adequate in quantity, is seriously deficient in quality and nutritional elements.

In her farming Rumania suffers from two inter- [161] related difficulties: rural over-population and low food output per acre. There are 16 agricultural workers per 100 acres of farm land, compared with 6 in Denmark and 3 in Britain. Another aspect of this is the extremely small size of most of the farms—75 per cent. of them are less than 5 hectares (12 acres) in extent. Because there is not enough land to go round, most farming families have to eke out a living on holdings which under any system of general farming would be too small to provide an adequate income.

The position would be less serious if a high per-acre food output were achieved. But in fact the Rumanian output per acre is barely one-quarter of that obtained in countries like Belgium and the Netherlands. Rumania pivots her farming on wheat and maize production but, owing to the extensive methods practised, the few livestock kept, and other reasons, per acre yields are among the lowest in Europe.

It is the over-population and land shortage which are largely responsible for agriculture remaining so backward. Having insufficient land the peasant does not produce much for sale, and so cannot afford to purchase fertilisers, good quality seed or better implements. Nor can he spare many acres for fodder crops, since the bulk of his land is needed to grow the food his family eats. And as he cannot buy fodder, he cannot keep many animals. Thus, while there is some scope for agricultural improvements which would ameliorate the peasants' lot, the pre-requisite of farming progress is to find alternative occupations for the surplus population.

423 The system of land tenure is peasant proprietor-
471 ship. This was attained under the Land Reform carried through after the first World War. The effect of this was to divide up and transfer to peasant ownership a large area of land formerly worked in big estates. This revolution in land tenure provided a solution for a long-standing social problem, but its effects on production were unfavourable. The large estates had been run by trained managers, with relatively advanced methods and equipment. Their transfer to ill-equipped, backward and uneducated peasants was followed, for a time at least, by a decline in yields, and consequently in total production and exports.

241 Little progress was made in the period between the two wars in remedying the disadvantages of uneconomic farm sizes, and in raising the low standards of farming. For lack of education the

241 peasant views with suspicion and often hostility all attempts at improvements in traditional [474] methods. Even the co-operative societies have made less progress than in other Danubian countries. There is need for considerable capital expenditure in grouping small farms into larger units, in providing better buildings, more implements and fertilisers. There is need for diversification of production—more fodder crops and more animal husbandry. Above all, there is need for development in industry and commerce to provide work for the surplus agricultural population.

2. Natural Conditions and Regions

132 The climate is of the extreme Continental type, with long hot summers and severe winters. Precipitation is largely concentrated in winter and early summer. During the greater part of the growing and ripening season rains are light, and from time to time serious droughts occur which may ruin the grain crops.

133 The agricultural regions correspond to the natural divisions into plain and hill country—the 311 Danube plain and Bessarabia which comprise the greater part of the territory and produce the bulk of the crops, and the hilly and mountainous land of Transylvania and the Bucovina.

The plain is well-suited for agriculture, the soil over much of it being of the fertile *chernozem* or [134] black earth type, but the backward methods of farming and the light rainfall keep yields per acre low.

This region is not equally backward in all parts. The Rumanian Banat at the western end of the country, and formerly part of Hungary, is more prosperous and progressive. The population is [162] not purely Rumanian but includes Swabians and Saxons, descendants of the German stock systematically settled there on medium-sized peasant holdings in the eighteenth century after the cession of the territory to Austria by the Turks. Methods and yields, by Rumanian standards, are good. [231] The livestock density is higher than the average and the area produces a substantial surplus of pigs. Rural overcrowding is not as marked as elsewhere.

241 Conditions of life and methods of farming are 133 considerably worse in the plain land of the Old Kingdom. Agriculture here is as primitive as in any part of Eastern Europe, depending on an unbroken alternation of wheat and maize cultivation with little subsidiary production. Some wheat is marketed, but the maize is grown largely [311] for consumption on the farms. So little land is available per head of population that the farm population and working animals (which eat the maize stalks) can be fed only by devoting an excessive acreage to maize.

Bessarabia makes up the remainder of the plain land; conditions of settlement and farming methods are much the same as in the Old Kingdom, but the density of population is lower and there are substantial grain exports.

Given normal yields, every district of the plain area is at least self-sufficient in foodstuffs; indeed parts of it regularly produce large grain surpluses. Transitional areas between the Danube Valley and the Transylvanian plateau, such as the Carpatho-Moldavia and Carpatho-Muntenia areas, may,

[6c]

241 however, be slightly deficient in grain, especially
133 in poor years.

[311] The hilly land of Transylvania and the Bucovina differs markedly from the plain. There is proportionately less arable and much more meadow, grazing and forest land. The soil is poor. Methods are not as primitive as in the plain land of the Old Kingdom, but over-crowding is more serious and output per head is consequently lower. Parts of this region are slightly deficient in grain. Though [146] the level of food consumption is low, the dietary is more varied than elsewhere in the country, less maize and more meat and dairy produce being eaten.

3. Crops

311 Of the total area of pre-war Rumania, of nearly 30 million hectares (119,000 sq. miles) and twice the area of England and Wales, about 13 million hectares, or 45 per cent. was arable. Permanent meadow, pasture and grazing occupied 14 per cent., while tree and bush crops accounted for a further 2 per cent. The remaining land was non-agricultural, forest and waste land.

243 A very high proportion of the arable—over 80 per cent.—was used for grain growing, principally maize, wheat and barley. Owing to low rainfall, use of poor seed and lack of fertilisers, yields were at a low level and fluctuated widely from year to year.

[439] Out of an average grain production of 11 million tons, 6 millions went into domestic human consumption and 1½ million were exported, the remainder going to fodder, seed and waste. Grain exports have always figured largely in the country's foreign trade. During the twenty years 1920 to 1939 they only once fell below a million tons, and in some years exceeded three million tons. In value, during the decade before the war, they formed, after petroleum products, the main item in exports.

241 No other category of crops compares with grain. Sown fodder crops took barely 5 per cent. of the arable, all other crops, including potatoes, fibres, oilseeds, tobacco and sugar beet, about 8 per cent. Peas, beans and oilseeds were grown in sufficient quantities to provide surpluses for export. Germany established two companies—Solagra in 1934 and Soya A.G. in 1940—which invested large sums in promoting oilseed cultivation. The area 149 under sunflower was raised only slightly, but that under soya rose from nil in 1933 to 103,000 ha. (254,000 acres) in 1939, but the greater part of both crops was located in Bessarabia which Rumania lost to the U.S.S.R. in 1940 (see below).

244 Production of potatoes, vegetables and sugar
249 beet was just sufficient for domestic consumption, but the tobacco crop did not quite meet requirements. Tobacco production had fallen from 20,000 tons in the late nineteen-twenties to 12,000 tons in the years just prior to the war.

245 Fruit production was undeveloped and there was little organised marketing and processing. Plums were the main crop, but three-quarters of the output was used for making brandy. Apples and other kinds of fruit, and walnuts, were produced in fair quantities, but exports were insignificant, and, owing to low quality and the lack of standardisation, there were no prospects of development.

241

*Production of Principal Crops**
Average 1935-38
('000 *metric tons*)

Wheat	3,677
Rye	430
Barley	1,071
Oats	604
Maize	5,215
Potatoes ..	2,010
Sugar beet† ..	570
Peas	45
Beans	230
Tobacco ..	12
Sunflower seed	177
Soya beans ..	42
Rape seed ..	48

* Pre 1939 frontiers.
† This produced 110,000 m. tons of raw sugar

4. Livestock

231

One of the chief weaknesses of Rumanian agriculture is the low density of livestock. Numbers of cattle per 100 acres of farm land are less than half those of this country and Germany; about half the farms possess no cows. A large proportion of the cattle, moreover, are draught animals which require land to feed them but which yield little saleable produce. Moreover, the annual milk yield per cow averages less than 1,350 litres (300 gallons) as compared with over 700 gallons in Denmark.

[234]

Of pigs, the numbers and quality compare even less favourably with those of other countries. Only in the Banat district is there an approach to an interlocking of grain production with pig-raising. Sheep are an important source of income to the peasants of the Transylvanian mountains, a region where water buffaloes are kept as draught animals since they require no sustenance other than a daily cold bath and a few maize stalks.

Livestock numbers in 1938, and the production of livestock products in 1935-38, were as follows:—

*Livestock Numbers**
'000 *head*

Horses	2,158
Cattle	4,161
(including cows)	(2,030)
Buffaloes ..	165
Sheep	12,768
Goats	399
Pigs	3,165
Poultry ..	34,666

* Pre-1939 frontiers.

*Production of Livestock Products**
Average 1935-38
('000 *metric tons*)

[234]

Milk‡	3,000
Butter	20
Cheese	30
Beef and veal ..	120
Mutton and lamb	20
Pork	152
Poultry meat ..	60

* Pre-1939 frontiers.
‡ Cows, buffaloes, sheep and goats.

5. Fish

228

[656]

All fishing along the Danube, including the mouths of the delta, and along the western shores of the Black Sea coast, is controlled by the State Fisheries Administration. The total annual catch in State-owned waters averaged 15,000 tons in the years immediately preceding the war, of which fresh-water fish contributed more than two-thirds. This does not, however, represent the total catch, as fairly large quantities were caught

[76]

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228 in private waters. Supplemented by some 4,000 tons of imported fish, this provided nearly 1 kg. (2·2 lb.) per head of population, but, in fact, almost all the fish was consumed by the 5 million persons living in towns. The principal fish caught were sturgeon, carp, pike, eels and crayfish, the main fishing centres being Brăila, Tulcea and Ismail.

6. Food Industries

256 The chief food and agricultural-processing industries are milling, sugar manufacture, oilseed crushing and tobacco curing. While the milling industry was dispersed widely about the country in more than 15,000 small mills employing altogether over 37,000 persons (at 1930 census), the sugar industry was for the most part concentrated in the plain of the Old Kingdom. Of the 17 sugar 257 factories employing 10,000 workers, only one was in the Transylvanian districts lost to Hungary and five in the areas temporarily lost to the U.S.S.R. 258 The vegetable-oil industry, located chiefly in Bessarabia, was only partly carried on in factories, of which there were (on January 1st, 1930) 117, employing 2,026 workers. Among these, 34 were fitted both to extract crude oil and to refine it, six were exclusively refineries, while the remainder produced only crude oil. The rest of the industry consisted of some 2,000 hand, or animal-driven presses mostly owned by individual peasants or by shopkeepers. These primitive presses extracted only a low percentage of oil from the seeds, and consequently the cake—mainly sold for export—had an unusually high oil content. As regards 277 tobacco, both curing and cigarette manufacture [656] were subject to government licence and control. There were 29 factories (in 1930) employing 9,720 workers, but tobacco cultivation subsequently declined, so also doubtless did the numbers employed.

7. Agricultural Organisation

452 The history of the organisation of Rumanian 241 farmers is one of not too successful co-operatives 474 becoming transformed more and more into agencies [654] for the execution of Government Control Schemes. For many years there had been throughout the country a network of agricultural credit societies, co-operative in form but in practice directed by the State. These played an important rôle during the period of the Land Reform in helping the peasants by advances to buy and equip their newly acquired holdings. There was even some co-operative cultivation for a time, until the new peasant-owners could muster sufficient draught animals and implements. Besides this, there have been strong [162] local co-operative unions especially among the minority nationalities—the Hungarians in Transylvania, the Swabian and Saxons in the Banat and the Russian and Polish Jews in the Bucovina.

243 The credit societies revived in importance when 474 after 1933, the Rumanian Government began the 452 organisation of grain marketing. They became 654 the local agents of a Central Marketing Board through which all sales of grain had to be made both for home consumption and for export. Whereas formerly grain prices slumped immediately after the harvest, most peasants, being obliged to sell their grain quickly, under the new scheme prices were stabilised throughout the year, and this brought a great improvement to peasants' [651] receipts. But the scheme and the societies were also used to collect the peasants' taxes (paid in grain) which did not increase the popularity of co-operation.

241 654 Alongside this organisation the State ran certain technical services for agriculture, distribution of tested seeds, control of weights and measures, provision of bull and stallion services from its own stud farms. This work, however, remained less developed than in other S.E. European countries.

8. Agricultural Exports

241 231 439 Rumania was the largest grain exporter in Europe. By value, grain accounted for over half the total of agricultural exports. Livestock products, mainly live pigs and cattle, amounted to approximately one-fifth of the total, the remainder consisting of peas, beans, oilseeds, oil and oilcake, eggs and small quantities of fruit. Quantities exported on the average in the years 1935 to 1938 are shown below :—

	*Exports of Principal Agricultural Commodities** *Average* 1935-38 ('000 *metric tons*)
Wheat	686
Maize	543
Barley	297
Peas	21
Beans	43
Oilseeds	108
Vegetable oils ..	5
Oilcake	103
Cattle ('000 head) ..	48
Pigs ('000 head) ..	222
Eggs	10

* Pre-1939 frontiers.

241 439 It is of interest to note that, despite German hopes of a development in oilseed cultivation and exports, no increase had been achieved up to the eve of the war. German interest had succeeded in stimulating production and exports of soya beans, but there was no expansion in total oilseed exports owing to a decline in rape seed and to an increase in domestic consumption of oil.

German purchases of Rumanian agricultural exports were increasing in recent pre-war years. In 1939 the territories of Greater Germany took 25 per cent. of the wheat exports, half the feed grain and the bulk of the oilseeds. Italy also took appreciable quantities of grain.

9. Food Consumption

146 262 The Rumanian diet is perhaps the worst-balanced in south-east Europe. The outstanding feature is its high dependence on grain, which provides three-quarters of the calories and 70 per cent. of the protein. In the towns white wheat bread is eaten except by the very poor, whilst in the country wholemeal bread or maize is usual. Over large areas, particularly in the Old Kingdom, maize forms the chief food. (Taking the country as a whole maize consumption is two-thirds higher than wheat.) During the summer months, when work is very heavy, peasant families may eat as much as 3 kg. (6½ lb.) a head daily, almost always in the form of *mămăliga* (a kind of porridge).

The rest of the rural dietary consists chiefly of beans, some potatoes (especially in Transylvania), cabbage, beetroots, carrots, onions and a certain amount of cheese and milk. Consumption of all these foods is much too low by nutritional standards. Meat is rarely eaten, except at Christmas time when a pig is killed—for the rest of the year small amounts of fat salted pork are used, more or less as a flavouring. Some fish is eaten in villages near rivers. Vegetable oils—mainly sunflower—and pig fats are used for cooking; butter is rarely eaten.

746 Largely because of its cost, the consumption of
262 sugar is very low; except among the well-to-do in the towns. (To encourage sugar-beet growing, a high price was set by the Government.)

[785] The diet is further impoverished by the long religious fasts—seven weeks before Easter, six weeks before Christmas, two shorter summer periods, plus Wednesdays and Fridays of each week. The diet during the fast includes practically no food of animal origin. Children under 10 years do not normally observe these fasts and, in fact, usually have a better diet during these periods since more milk, eggs and butter are available for them.

The diet, though fairly adequate in energy value, is short of animal protein, fats and calcium; moreover, where maize is the principal cereal lack of vitamin B_1 may be very serious. Various symptoms of vitamin and mineral deficiencies are [165] observed, and the high infant-mortality rate—the highest in Europe—is also partly due to malnutrition. One of the most serious effects of the poor diet is the nervous disease pellagra, caused by this deficiency of the vitamin B_2 factor. In Moldavia, where maize is the staple food, about 5 per cent. [164] of the rural population suffers from pellagra every spring. In the whole country about 3,000 deaths occur each year from this disease (compared with 4,000 in the maize-eating southern states of U.S.A.).

The average annual pre-war food consumption of Rumania is shown in the following table, with comparative figures for the United Kingdom.

Average per Head Consumption

	Rumania		*United Kingdom*	
	Kg.	*Lb.*	*Kg.*	*Lb.*
Wheat and rye..	104	229	129	285
Maize	166	365	—	—
Potatoes ..	50	110	84	185
Sugar	5	11	43	95
Meat	17	37	63	139
Milk	70	123*	94	165*
Butter	1	2	11	24
Pig fat	4	10	5	11
Vegetable oil ..	1·5	3	—	—
Margarine ..	—	—	4	10
Calories per day	2,700		3,100	

*Pints

B. WAR-TIME CHANGES

1. Territorial Changes

728 The net effect of the territorial changes which
241 have occurred since 1939 is the loss of Northern
311 Transylvania to Hungary and of Southern Dobruja to Bulgaria. For two seasons' crops, 1940 and 1941, Rumania was without Bessarabia, but in the late summer of 1941 she not only regained Bessarabia but acquired administrative control of the Soviet territory now styled Transnistria, and this has made small contributions to the food supplies of Rumania in 1942-43. Ignoring Transnistria, however, Rumania lost 12 per cent. of her former arable area and grain production. The Transylvanian areas ceded to Hungary, though not rich agriculturally, probably needed only small imports of grain to supplement their own production, while south Dobruja, though a surplus producing area, contributed only a fraction to Rumania's total agricultural production. The country's potential agricultural export remains, therefore, substantially what it was before the war.

2. Agriculture in War Years

241 Germany, at the outbreak of the war, looked to
722 the Danube countries, and to Rumania in particu-

241 722 lar, for grain, oilseeds and livestock products to provide the balance of food and fodder requirements which she could not obtain from her own agriculture. The normal grain surpluses and the potential output of sunflower and other oilseeds appeared sufficiently large to provide a solid basis for these expectations. Owing, however, to wartime dislocations of economic life, to the absence of adequate administrative control of farming, to the lack of co-operation by the peasants, and, above all, to a succession of unfavourable seasons, these hopes have been almost entirely falsified.

Firstly, in 1940, Rumania lost Bessarabia, her principal surplus region, to the U.S.S.R., and with it all that year's crops. When she regained it in 1941 she obtained no surplus out of that harvest, and, because of disorganisation, little in 1942. In rump Rumania, in 1940 and 1941, the grain harvests were substantially below the average owing to reduced sowings (partly caused by mobilisation) and to disappointing yields. A determined effort was made by propaganda and the release of labour to bring sowings back to normal for the 1942 season. But the early onset of an unusually severe winter again reduced the sowings, while a serious drought in the summer of 1942 reduced the yields.

722 [243] There was a deficiency in wheat sowings of over a million hectares, while grain yields were barely 60 per cent. of the average. The out-turn of the year was consequently worse than that of the two preceding years. Wheat and rye yielded only 1·3 million tons compared with an average for the territory of 3·6 million tons. The maize crop was a little less than 3 million tons compared with an average of 4·7 million tons. The total grain production was about 5·5 million tons, a quantity inadequate to meet the requirements of food and fodder at any approach to normal levels.

[241] Other crops were more successful in 1942, but they could not appreciably offset the disastrous grain results. The potato crop reached an average level for the first time during the war years, and part of it was used to stretch the deficient wheat for bread making. There was also a good crop of beans and peas, largely because, as their prices were not controlled, they were very remunerative crops. The sunflower crop, though sowings failed to reach the ambitious target and yields were only 90 per cent. of normal, was of record dimensions. Soya, rape and sugar beet declined, however, from earlier levels. (A significant supplementary supply of sugar is now being obtained from Transnistria.)

[243] These for the most part poor crop results, besides curtailing the supplies available for human consumption and exports, also brought about a reduction in livestock numbers at the end of 1942. Livestock numbers may, however, have increased somewhat in 1940 and 1941, for it was reported that peasants held back more grain than usual in those years for livestock feeding. If this is true, numbers would now probably be little different from those of pre-war years.

[241] Crop prospects for 1943 point to a more normal result. The winter of 1942-43 was late and mild, making it possible to sow a near-average acreage of winter crops. Preparatory work for spring sowings was also done in good time, and on the whole the weather subsequently has not been unfavourable.

722 649 Tobacco cultivation appears to have declined in the war years, principally because the prices were even more unattractive than those of grain. In 1942 the area sown was reported to be little

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722 more than half the normal, but the efforts in 1943
[249] to recover to a more average crop may have succeeded.

3. Fish

[228] The general food shortage in Rumania gave a great fillip to the fishing industry. In the 12 months April 1942 to March 1943, some 40,000 tons of fish were caught in State waters besides 13,000 tons in rented and private waters. This is almost double the largest pre-war catch. During 1942 some 6,000 tons were salted down for winter use. In order to promote and introduce better organisation into the fishing industry a German-Rumanian Company has been established, the "Marea-Neagră," which will devote special attention to developing the Black Sea fisheries.

4. Agricultural Exports

439 The pre-war level of grain exports was well
243 maintained in 1939; wheat in particular was preminent with over a million tons. The exports of 1940, however, showed an immediate reflection of territorial changes and war shortages. Total grain exports in that year barely reached a million tons compared with the pre-war average of about 1·6 million tons. The following year showed a still sharper decline, wheat reaching only 5,000 tons and maize 120,000 tons. In 1942, despite the recovery of Bessarabia, it is most unlikely that even this level was maintained.

439 Oilseed exports, despite direct German interven-
249 tion aiming at an expansion of the crop, also fell below pre-war levels. Sunflower-seed exports, the principal oilseed, fell from an average of 30,000 tons in 1935-38 to 12,000 tons in 1940 and to 5,000 tons in 1941. Exports following the 1942 crop, though probably better, were not at all commensurate with the increased production, for a serious shortage of edible oil and fat had meanwhile developed in Rumania owing to decreased supplies of pig fat and to the retention by the peasants of their seed for consumption at home, or for disposal on the Black Market.

5. Administrative Control

241 Not even the most complete and efficient system
656 of administrative control could have assured the
435 country's food supplies and exports at normal levels during these three unfavourable years, but it is clear that Rumania's food difficulties have been aggravated by mistakes in economic policy and inadequate control measures. Bureaucratic methods of handling the peasants aroused antagonism and resistance. Supplies of tested seed and other farm requisites were not made available in time. On the collection and supply side, too much power was left in the hands of local prefects. But the most serious shortcoming of the official administration was the failure to establish a price control, and an appropriate relationship between agricultural prices and the cost of the things farmers buy. (In the absence of effective discipline this ratio needs to be strongly in the producers' favour if production and marketing of foodstuffs is to be maintained.) Prices of consumers goods rose rapidly, owing to shortages, while the Government pegged the prices of farm produce at comparatively low levels. Consequently the peasants curtailed production and sought better prices by selling much of their produce through Black Market channels. The mistake was officially admitted in the autumn of 1941 when grain prices were more than doubled, but the position still remained unfavourable to

241 the peasants and the reduced 1942 sowings both
656 of grain and of sugar-beet indicated continued
435 dissatisfaction. Finally, by the spring of 1943 a wiser ratio was reached, agricultural prices being four times as high as in 1939 and wholesale prices in general three and a half times as high. Nevertheless, this very considerable measure of inflation
[458] has shaken public confidence in the value of money so that peasants increasingly resort to barter transactions.

[655] In the hope of obtaining better control over grain supplies the Government in the autumn of 1941 nationalised the grain trade, later they relaxed this to the extent of leaving the export business to a few selected firms and the internal collection to the Army and to the National Institute of Co-operation. This body handled the pre-war grain marketing scheme, and their
[563] activities—because of the expulsion of Jews from wholesale and retail trade—have recently developed rapidly in the supply of seeds to peasants (80,000 tons of seed distributed in 1942) as well as consumers' goods to peasants and townspeople. But it still proved difficult to extract enough food from the peasants to feed the towns. For the 1943 harvest detailed regulations were made concerning the quantities the peasant might keep for seed, for his family and for his animals, and threshing operations were subjected to inspection. Yet these rules could not in practice be administered.

423 It is now generally agreed in Rumania that the
471 smallness of the holdings has been a principal obstacle to effective organisation of agriculture in war-time, and that a change to larger units of production is needed. Any approach to collectivisation on the Soviet model, however, would be regarded as contradictory to the land reform policy and a threat to the Rumanian State. The official policy, though it has not yet taken its final form, is to maintain private property but to proceed no further with expropriation and division of large estates, and to maintain existing medium holdings by prohibiting their sub-division for inheritance or other reasons. Schemes for the consolidation of strips are also contemplated for a
474 more opportune moment. Further, in order to increase production and to improve the peasants' methods and standards of life, communal farming associations, known as *obști*, are to be formed. In these associations, farming equipment is to be pooled so that the small-holder would have the same resources as the large farmer. Each *obște* is to embrace a village and perform all the functions of a co-operative, including joint purchase and sale, use of breeding animals, processing of crops, etc. Villages which are prepared to form themselves into *obști* and to undertake to work the land according to State directions, are promised tractors, seed and breeding stock without payment. In this way it is hoped that some of the advantages of collectivisation may be achieved while retaining those of individual ownership. But, unless accompanied by far-reaching industrial development, the plan can but aggravate rural unemployment. It is not known how this innovation has been received by the peasants. It was reported in April 1943 that 270 of these communal associations had been formed—an insignificant number—and it is believed that the Government is allocating to them some of the tractors imported from Germany in the war years.*

241 The success of the *obști* plan, and indeed of any plan for up-grading Rumanian agriculture, depends

* In June, 1943, a temporary ban was placed on the formation of any new *obști*, because there was insufficient agricultural machinery to supply to them.

241 very largely on the acquisition of tractors and other equipment. Only Germany can provide these requisites and it is of interest that, despite the poor contribution Rumania has hitherto made to Germany's food supplies, the latter has gone some way to assist the attempted reform. Over 4,000 [439] tractors with their ploughs and a variety of other implements have been imported from Germany during the war years. Tractor numbers in Rumania have probably been more than doubled by these imports, but they still represent only the beginnings of mechanisation. They have doubtless been supplied, despite insistent demands for tractors in Germany and elsewhere, in the belief that, if properly applied, they may make some slight increase in available surpluses. Some of these may have been destined for Transnistria to make good the Russian scorching.

6. Food Conditions

511 Food conditions have varied according to local resources, and in the months following the poor crops of 1942, according to the success of local prefects and officials in securing supplementary quantities from the more favoured areas. The [162] greater part of the population is rural, and most families feed themselves with their own home-grown produce. In the earlier years of the war these were able to maintain their consumption standards, but in 1942-43 there must have been a more serious degree of shortage and privation than is usual even after short crops. In the towns there has been a severe curtailment of food supplies, mitigated in individual cases by access to the Black Market.

262 Urban shortages developed early in 1941 and 431 official rationing cards were introduced in May of 511 that year in Bucarest and brought into use soon after. Sugar and meat were the first commodities to be rationed. The original sugar ration was 375 grammes (13 oz.) per week, but since May 1943 it has been only 125 grammes (4½ oz.). Meat, originally 250 grammes (9 oz.), is still (July 1943) at this level, though for a short time at the end of 1942 it was higher owing probably to the abnormal slaughterings caused by fodder shortages in 1942. Bread was first officially rationed in January 1942, but was preceded by baking regulations requiring maize admixtures in the loaf. The ration of [illegible]

262 434 511 grammes (10½ oz.) daily was available on five days of the week only; on the other two days maize meal only (for *mămăliga*) could be bought. The bread ration was reduced to 250 grammes in June 1942 and maize meal itself was rationed in August. The number of breadless days has varied, while barley, flour or potatoes have at times been offered in place of maizemeal. The bread mixture has also included varying proportions of maize, barley, potato and other flours. The allowance in June 1943 was 450 grammes of bread on five days and 1,000 grammes (35 oz.) of maize flour or potato flour on each of the remaining two days. All these quantities apply to Bucarest only. Other towns show variants of these regulations, depending on local supplies.

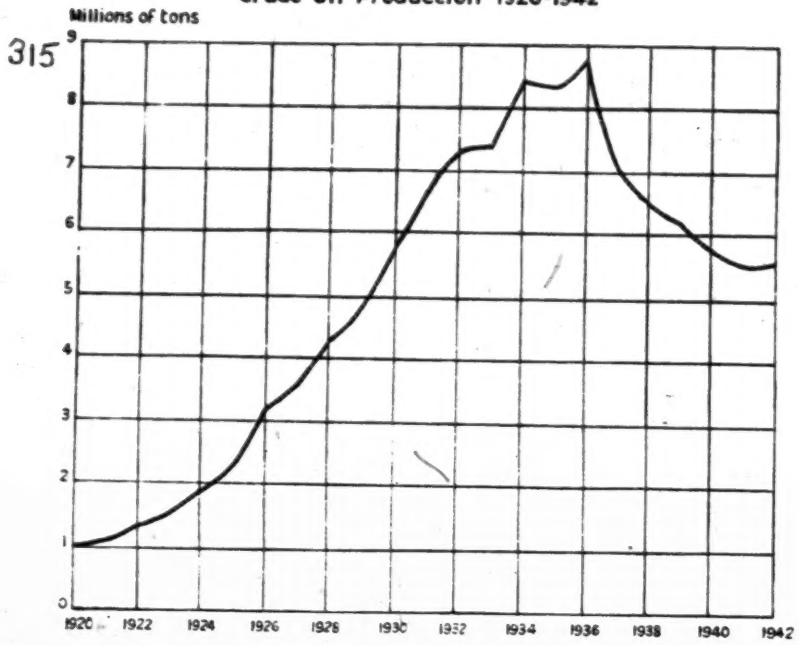
234 435 511 The most serious shortage in Bucarest and possibly in other towns, appears to be milk. Owing to the depletion of surrounding herds following the high cost and scarcity of fodder, only a small part of the former supply now arrives. Some milk, as with all products, is diverted to the Black Market, and official mistakes in price policy at various times have caused temporary gluts or stoppages in food supplies. Other livestock products and edible oil are also chronically short in the towns.

7. Food Prices

435 565 511 In spite of official attempts to protect consumers from increases, retail prices and the cost of living have risen almost to the same extent as producers' and wholesale prices. Taking autumn 1939 as 100, the cost of living was 330 and the cost of food 350 in the spring of 1943. These increases have been severely felt by the working and lower-middle classes. Official measures were taken to alleviate the situation of civil servants by the setting up of stores and canteens with reduced prices, some of the goods being supplied from Transnistria. Likewise firms with over 50 employees were ordered to supply them with essential foodstuffs at low prices. Persons with more ample resources make use of the Black Market on which all the ordinary foodstuffs are obtainable, usually at only two to three times the official prices, the moderate character of these illegal prices being itself another illustration of the large quantities available through these channels due to the laxity of control.

315

RUMANIA
Crude-Oil Production 1920-1942



CHAPTER II

OIL

[oil]

A. INTRODUCTION

1. General

315 Both in peace and in war, the Rumanian oil industry has played an important part in the economy of the nation. Although the numbers directly employed in the industry are comparatively small—some 40,000 men—its importance to the nation can be gauged by the fact that the 4·5 million tons of oil exported in 1938 represented a value of 9·3 milliard lei, or 43 per cent. of the total export trade of 21½ milliard lei. Not only was oil the backbone of the country's foreign trade, but the industrial and general internal economy of the country is probably more dependent on oil than any other country in Europe.

War has not lessened the importance of her oil resources to Rumania—her industries and transport remain equally dependent on oil; her normal oil export trade has gone, but the Axis [439] are greedy for every drop of oil which they can extract from Rumania, and from Rumanian wells comes almost one-third of all the liquid fuel which has to keep the wheels of Axis Europe turning. In 1940, oil exports represented 63 per cent. of the value of Rumanian exports, and whereas in 1938 30 per cent. of Germany's imports from Rumania consisted of oil, in 1940 this had risen to 56 per cent. It is undoubtedly true to say that of all the raw materials coming from outside her own borders on which German war economy is dependent, Rumanian oil is one of the most vital.

2. Historical

The first commercial oil production in the world took place in Rumania in 1854, when 275 tons were produced. From that date until 1936, with the exception of the years of the Great War, production gradually increased to a peak figure of 8·7 million tons or 3½ per cent. of world production.

The trend of production over the last 20 years is shown on the graph on the opposite page. 1 A

Although in 1942 the downward trend since 1936 may have been halted, or even reversed, this has been only by dint of a special effort to increase production and possibly uneconomic exploitation. In 1937 Rumanian geologists estimated that the country's oil reserves would be exhausted within ten years, and although declining production may be due in large part to the natural exhaustion of known fields, it is also due to the restrictions of the antiquated mining laws. These tended to curb normal expansion, and made exploratory drilling in non-proven areas so unattractive as not to be a commercial proposition, with the consequence that exploration, by which alone production could in the long run be maintained, was neglected. These mining laws have been superseded by a new law passed in July 1942, the main provisions of which are for the express purpose of encouraging new production by the removal of the restrictions set upon prospecting in new areas. The reserves which, under the 1937 law, the State insisted on maintaining, are now sacrificed, concessions are now granted on the basis of geological structures rather than surface areas and wasteful competition is eliminated in their exploitation. The law empowers the Government to demand the modernisation of refining and drilling equipment.

1 A [p. p.12 - Arabic]

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B. THE PETROLEUM INDUSTRY

1. Oil Production

315 There are four districts in which oil production is centred. Prahova, Dâmbovița, Buzău and Bacău, while the town of Ploești is the hub of the oil industry. In 1938 out of a total production of 6·6 million tons, the Prahova district produced 3·98 million tons—2·78 from private and 1·2 from State concessions; Dâmbovița produced 2·54 million tons, two-thirds of which came from State concessions; Buzău and Bacău produced only some 40,000 tons each. In 1941 Prahova production had dropped from 3·9 to 3·4 million tons; Dâmbovița from 2·5 to 1·7 million tons, production from Buzău and from Bacău remaining unchanged.

[382] The wells are connected by pipeline with the refineries, all but three of which are in Ploești; even at the time of peak production in 1936 Rumanian refining capacity was sufficient to take care of all the crude oil production of the country. The total refinery capacity in 1938 was over 10 million tons including nearly 2 million tons of cracking capacity, but of the total capacity probably not more than half is of modern design.

2. Consumption and Exports

315 439 The following table indicates internal consumption and exports in 1938, when crude production was 6·6 million tons. Exports were made to all countries in Europe including over 700,000 tons to Germany, over 500,000 tons each to the United Kingdom and to Italy, nearly 300,000 tons each to France and Czechoslovakia, and some 400,000 tons to North Africa, of which 280,000 tons to Egypt.

1938

Internal Consumption and Exports

	Internal Consumption	*Exports*	
	'000 tons		
Crude oil ..	—	336	
Motor spirit ..	154	1,586	
Kerosine ..	182	827	74% *via* Constanța,
Gas/Diesel oil ..	117	755	20% *via* Giurgiu.
Fuel oil	1,001	917	
Special fuel oil*	131	—	
Lubricants ..	24	41	
Wax, asphalt, etc.	64	30	

* Mainly for central heating.

315 Nearly 70 per cent. of internal consumption was therefore represented by fuel and special fuel oil, and this figure shows the extent to which industrial and domestic plant have been built up on the basis of burning fuel oil, and the dependence of the country on adequate supplies of fuel oil for its essential services. In this dependence will be seen some explanation of the fact that Rumania is one of the few countries in the world whose internal consumption of oil for non-military purposes has not declined in war-time.

The main consumers of fuel oil and special fuel oil were as follows:—

	Tons
Railways	195,000
Shipping Services	90,000
Industries	419,000
Power Stations	160,000
Central Heating	148,000
Agriculture and Peasant Mills	19,000

[13c]

CHAPTER II

3. Transport

315 For the transport of oil both for internal consumption and for export, Rumania relied largely upon railways, and except between the wells and the refineries, only a relatively small proportion was transported by pipeline. The three main pipelines were State-owned and were laid mainly for the transport of oil for export: one for white products from Ploești to Constanța with a capacity of 810,000 tons per annum, and two lines for crude and heavy residue from Ploești to Giurgiu with a combined capacity of 300,000 tons per annum.

The total quantity of oil through three lines in 1938 was 800,000 tons; 13 per cent. of the exports from Constanța and 17 per cent. of those from Giurgiu were handled in this way as well as the internal transport of some 184,000 tons of crude [497] oil. The Rumanian fleet of 8,000 tank cars was ample to handle all the oil transported by rail.

The main channel for exports was Constanța on the Black Sea, through which 3·3 million tons were exported in 1938, as compared with only 935,000 tons through Giurgiu for transport up the Danube.

C. THE INDUSTRY IN WAR-TIME

1. General

315 722 The war has completely altered the orientation of the Rumanian oil industry: normal export trade routes through Constanța and the Mediterranean were cut and exports to most countries in Continental Europe came under German control as soon as the Germans were astride the Danube at Belgrade, and the main railways through Poland and Yugoslavia. Not only were normal export channels disrupted, but the Rumanian oil industry lost the services of all its foreign technical experts, and could no longer get from the United States supplies of drilling and refinery equipment on which it had very largely relied.

The inevitable result of all this was that in spite of the urgent need for increased production and all German efforts to obtain this, the downward production trend was not halted in 1941, and only 5,483 million tons were produced. That year was, however, one of abnormal difficulties owing to the necessity for reorganising the industry on a war-time basis, rapidly rising prices of almost everything but oil, shortage of man-power owing to Rumanian mobilisation, the difficulty of getting equipment, and above all an abnormally severe winter which hampered transport so severely that production had to be restricted for lack of storage. By dint of continuous German pressure and increased control of the industry, production in 1942 probably reached 5·6 million tons.

Internal consumption has, however, not decreased and is thought to be running at a rate of 2 million tons a year, which leaves between 3 and 3½ million tons available for the Axis and neutral countries in Europe. Italy gets approximately one million tons a year, Germany two million tons, and small quantities go to Switzerland, Sweden and Turkey.

315 439 Except during the winter months when navigation on the Danube is suspended, the majority of exports to Italy go by pipeline to Giurgiu and thence by barge to river ports in Yugoslavia or Hungary for transhipment to Italy by rail-tank car. One of the results of the reorientation of Rumania's oil export trade has been the greatly increased use made of the river port of Giurgiu.

[14a]

315 Two additional pipelines, each of 10 in. diameter, constructed largely of material removed from France, have been built between Ploesti and Giurgiu, each with a capacity of over three quarters of a million tons a year.

New refinery and drilling equipment, which prior to the war Rumania used to import largely from the United States, has now to be obtained from Germany. The financial terms on which this equipment is obtained are unfavourable to Rumania and deliveries are slow.

315 **2. German Influence on the Oil Industry**

648 473 German pressure upon Rumania to obtain greater supplies of oil has been largely exerted by means of commercial penetration into the oil industry, but there is evidence that Nazi diplomats have laid particular emphasis on the German need for oil, suggesting that larger supplies might be available if production was increased and internal consumption reduced.

German penetration into the Rumanian oil industry began to take aggressive form some time before the war. The Germans first acquired a minority holding in Creditul Minier, then in 1939 secured control of Petrol-Block. The collapse of France afforded further opportunities of encroachment, and through Kontinental Oel A.G. control of Concordia and Colombia was secured; similarly, by assuming arbitrary control of Dutch interests the Germans now direct the policy of Astra-Română, the largest of the producing companies. In all, German influence through financial control now extends to about 50 per cent. of the industry, and 60 per cent. of productive capacity, quite apart from the pressure the Germans can exert through control of transport out of the country. The actual effect of this influence is not easily assessed, modified as it is by Rumania's nationalistic oil legislation—particular privileges are reserved under the new mining laws for companies which can show that 75 per cent. of their capital is in Rumanian hands—and the instinctive aversion of the Government to outside control. It is, however, sufficient to ensure that German requirements have a definite priority, and nationalistic as some parts of the new mining law may be, any measures serving to increase immediate production, under whatever pretext they are taken, are beneficial to Germany's interests. Tables I and II on pages 15 and 16 show the approximate strength of the oil groups by nationalities in 1940 and 1942. 1

3. War-time Restrictions

315 135 Nearly 70 per cent. of Rumanian petroleum consumption is represented by fuel oil, and a theoretical saving could be brought about by the use of coal and natural gas. Coal resources, however, are limited, and in any event a greatly increased use of coal is restricted also by the speed at which locomotives and power plants can be converted from oil to coal burning.

315 434 In November 1942 a petrol-rationing scheme was introduced, and although the allowances were on a liberal scale, the regulations do not appear to have been observed and the scheme as a whole was ineffective. In March 1943 this was admitted by the announcement that the scheme would be more strictly enforced and new ration cards issued. Simultaneously regulations were published concerning the use of taxis, and a time limit of September 1943 was set for the conversion of boiler plant.

In general, attempts to restrict consumption either by the announcement of new regulations

1 [Cf. Cat. 315, pp. 15c and 16a-Analyst]

[14b]

315 434 or the enforcement of old, have lately been more determined.

These measures, however, are unlikely to result in a saving of more than a quarter of a million tons a year, and rationing regulations and restrictions are probably less severe in Rumania than elsewhere in Europe.

D. NATURAL GAS

315 In addition to the supplies of liquid fuel derived from her oil wells, Rumania has considerable resources of natural gas. Production of gas in the Ploești oilfield area in the years before the war was used mainly for the making of gasolene, for gas lift in wells, for heating purposes in field and refinery, and for household use. There was no surplus for use outside the Ploești district.

Of much greater importance than these supplies of casing-head gas are Rumania's resources of methane natural gas from Mănești and Transylvania. While the Mănești gas deposits were known before the war, the extent of the reserves there had not been determined.

In Transylvania the reserves are estimated at not less than 500,000 million cubic metres. Pro-

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duction has been going on since before the last war and has been restricted to the amount that can be used by consumers over the 200-mile pipeline network, extending as far south as Brașov. 1941 consumption amounted to 300 million cubic metres (or 35 million cubic feet a day), equivalent to approximately 280,000 tons of oil. Industry consumed some 85 per cent. of this, the remaining 15 per cent. being used for domestic purposes.

A law passed in November 1942 laid down the conditions for the supply of natural gas to Bucarest. The State, the National Methane Co., State Railways, Gas and Electricity Supply Co. and the Municipality of Bucarest in conjunction are made responsible for the supply of gas to the capital, where public utilities will be the first to be supplied. Pipeline material was supplied by Germany and gas has now been piped from Mănești to Bucarest, and it is hoped that it may replace fuel oil to the extent of 120,000 tons in the first year of operation in the capital. It is planned eventually to link up the Transylvanian deposits by pipeline with Bucarest via Mănești, when the combined production of the two gas sources will permit an annual consumption of some 500,000,000 cubic metres, or the equivalent of 400,000 tons of oil.

16: Great Britain G-4 (no date) 1943 EDl Rumania EDl

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TABLE 1

APPROXIMATE STRENGTH OF OIL GROUPS BY NATIONALITIES IN 1940

	Capital		Fixed Assets		Production*	
	In millions of lei	Per cent.	In millions of lei	Per cent.	Thousands of tons	Per cent.
Anglo-French-Belgian .. 5 large companies 14 small companies	9,893	64·72	30,089	64·83	4,253	67·09
American .. .. 1 large company 1 small company	1,913	12·51	5,513	11·88	900	14·20
Italian .. .. .. 1 large company 1 small company	386	2·53	1,259	2·71	335	6·29
German	77	0·50	525	1·13	51	0·80
Rumanian .. .. 2 large companies 33 small companies	3,017	19·74	9,024	19·44	800	12·62
Total	15,286		46,410		6,339	

* The production figures shown in this Table appear to be those for 1939.

[illegible]

CHAPTER II

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TABLE II

APPROXIMATE STRENGTH OF OIL GROUPS BY NATIONALITIES IN 1942

	Capital		Fixed Assets		Production*	
	In millions of lei	Per cent.	In millions of lei	Per cent.	Thousands of tons	Per cent
German group owns, controls or directs	3,431	22·45	11,267	24·28	1,487	23·46
American	5,795	37·91	13,288	28·63	2,361	37·24
Vacuum Oil	6	0·03	87	0·19	—	—
British	912	5·97	3,835	8·26	640	10·10
Anglo-French	2,387	15·61	8,107	17·47	740	11·67
Steaua Romana						
Anglo-French-Belgian ..	569	4·38	2,000	5·60	145	2·29
14 small companies						
Italian	386	2·53	1,359	2·71	335	5·28
Rumanian	1,700	11·12	5,997	12·86	931	9·96
Total	15,186		46,410		6,339	

* The production figures shown in this Table would appear to be those for 1939

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TABLE III

PRINCIPAL RUMANIAN OIL COMPANIES, 1942

Name	Founded	Capital (mill. lei)	1940 Crude Production (tons)	Controlling interest
Astra Română	1910	2,542	1,173,256	Royal Dutch Shell
Concordia	1907	2,030	793,626	Kontinental Oel A.G.
Româno-Americana	1904	1,500	727,345	Standard Oil of New Jersey
Steaua Română	1895	1,500	640,920	French, Rumanian, British
Unirea	1921	720	652,000	General Mining Corporation
Columbia	1905	380	585,193	Kontinental Oel A.G.
Creditul Minier	1919	605	292,166	Rumanian
Prahova	1920	330	271,947	A.G.I.P. (Azienda Generale Italiana Petroli)
I.R.D.P. (Industria Romana de Petrol)	1920	120	117,925	Sudostchemie Hand. A.G. German
Petrolul Românesc	1920	120	83,377	Creditul Minier, Rumanian
Starnaphtha	1926	60	55,530	French
Foraj Lemoine	1923	44	42,658	Rumanian, Franco-Belgian
Redevenţa	1918	300	28,474	Rumanian
Foraky Românească	1922	50	25,958	German
Sondrum	1921	100	17,982	French
Petrol Block	1918	470	—	German (refining company)

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TABLE IV

PRINCIPAL RUMANIAN REFINERIES

Name	Location	Annual Capacity (tons)	Cracking Capacity (tons)
Astra Română	Ploeşti	1,750,000	600,000
Steaua Română	Câmpina	1,500,000	350,000
Concordia	Ploeşti	1,300,000	200,000
Română-Americano	Ploeşti	1,100,000	350,000
Phoenix Unirea Orion	Ploeşti	800,000	150,000
Standard Petrol Block	Ploeşti	550,000	150,000
Creditul Minier	Brazi	530,000	150,000
Colombia	Ploeşti	485,000	260,000
Unirea Speranţa	Ploeşti	400,000	—
Redevenţa	Ploeşti	230,000	—
Prahova	Bucarest	200,000	—
Lumina (Petrolmina)	Ploeşti	140,000	—
Noris	Ploeşti	50,000	—

CHAPTER III

OTHER FUEL AND POWER 000

I. COAL

A. Consumption, Imports, Deposits

372 375 Coal has not played such a large part in Rumanian economy as it has in that of most European countries, because of the abundant mineral oil and timber resources which have been used extensively for fuel, both in industry and for household purposes. The following table shows the percentage consumption of the different types of fuel (average 1937-39) :—

	%
Firewood	28·7
Oil and oil products	26·1
Coal	25·9
Methane and other gases	17·2
Water power	2·1

The railways accounted for 60 per cent. of total coal consumption which was of the order of 2 million tons, the balance being divided between industry, household consumption and bunkers.

135 Before the war coal reserves, which are predominantly brown coal, were estimated at 2·7 milliard tons brown coal (including lignite), and 48 million tons of hard coal. The more important deposits are located in southern and western Transylvania, while a few of lesser importance are in the northern area which was ceded to Hungary.

316 439 In spite of the limited industrial development of the country and extensive use of oil, coal production is hardly sufficient for current needs, and it has been necessary to import both coal and coke to fill the deficiency.

Pre-war coal imports in metric tons were as follows :—

	Metric Tons
1935	21,000
1936	23,000
1937	28,000

316 439 It is difficult to estimate coal imports since the war, but available evidence suggests that they are in the neighbourhood of 75,000 tons annually or three times as high as the pre-war figure. Owing to the exigencies of war, railway traffic has increased enormously, and the switch-over from oil-burning to coal for industrial and central-heating plants all add to the demands for coal.

135 **Coal Deposits**

The principal coal-producing district is around Petroşani, while the main deposits are as follows:—

Type	*Location*	*Calorific Value*
Anthracite ..	Schela in Gorj district	7,300
Hardcoal* ..	Reşiţa and Anina-Steierdorf	6/7,000
Brown coal and lignite	Jiu valley	6,500
	Comăneşti basin ..	5,200/5,600
	Ialomiţa valley ..	5,000
	Dâmboviţa valley ..	5,000
	Bacău district ..	5,000

* Some is suitable for coking.

B. Tables

1. Coal Production

316 During recent years coal production has been increased in spite of a slight setback in 1940, when with the transfer of N. Transylvania to Hungary a small proportion of the working mines were lost. Further efforts are being made to increase production so that fuel-oil consumption may be reduced. To this end the conversion of central-heating installations, industrial oil-burning plant and oil-fired locomotives to coal burning has been ordered.

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COAL PRODUCTION

	Brown Coal	%	Hard Coal	%	Lignite	%	Anthracite	%	Total
1930 ..	1,799,877	75·9	298,825	12·6	271,180	11·5	—	—	2,369,882
1935 ..	1,453,394	74·7	261,085	13·4	213,367	11·0	17,207	0·9	1,945,053
1938 ..	1,822,128	76·1	290,575	12·3	274,570	11·5	3,265	0·1	2,390,538
1939 ..	1,904,834	77·4	282,006	11·4	237,710	11·1	4,400	0·1	2,428,950
1940 ..	2,384,586*	—	260,985†	—	—	—	—	—	2,645,571
1941 ..	2,317,138*	—	229,703†	—	—	—	—	—	2,546,841

* Including lignite. † Including anthracite.

2. Location of Collieries

LOCATION OF PRINCIPAL COLLIERIES IN ORDER OF IMPORTANCE

	Annual Production		
	Coke	Briquettes	Coal
1. *"Petroşani" S.A. Română pentru Exploatarea Minelor de Cărbuni*—			
Pits at Petrilla and Aninoasa near Lupeni	—	—	1,500,000
At Petrilla there are also a low-temperature carbonisation plant capable of producing 20,000 tons annually and briquetting plant capable of producing	—	100,000	—
2. *Uzinele de Fier şi Domeniile din Reşiţa S.A.*—			
Pits at Anina, produce coal similar to Pecz (Hungary) coal; modern installations	—	—	200,000
Washeries, briquette factory and coke ovens	86,000	50,000	—
The *Doman* mines near Reşiţa produce coal similar to Pecz (Hungary) coal	—	—	50,000
The *Secul* mines near Reşiţa produce coking coal	—	—	25,000
3. *"Creditul Carbonifer" S.A. Miniera*, near Comăneşti, produce—	—	60,000	200,000
4. *"Lonea" S.A.R. pentru exploatarea minelor de cărbuni* owns collieries in Hunedoara basin in Jiu valley and produces ..	—	—	100,000
5. There are also a number of smaller colliery companies and a small mine at Gorj producing anthracite	—	—	3,000

[17d]

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CHAPTER III

3. Coke Imports and Production

	Imports	*Production**
	in '000 tons	
1936	39	78
1937	49	78
1938	63	86
1939	55	88
1940	54	86
1941	n.a.	90

* Including gas coke.

Of the total coke available annually—140,000 tons—100,000 tons were consumed by blast-furnaces and iron-works, the remaining 40,000 by other industries.

II. ELECTRIC POWER

A. General

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Being an agricultural country, Rumania, like the other countries of South Eastern Europe, is not extensively developed from the electrical point of view. The most important high-tension transmission lines are located in the neighbourhood of the Prahova oilfields and of Bucarest, but though these two areas are interconnected by means of lines operating at 120 and 60 kV, there is no national grid. There are a few other high or medium-tension lines which mostly connect power stations owned by industrial concerns. The majority of generating stations giving a public supply are quite isolated from each other.

1. Sources of Power

Rumania's potential water-power resources are high. It is estimated that 24,000 million kWh could be obtained annually from the economically

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exploitable water-courses, necessitating the installation of 5,500,000 kW of plant. The water power developed so far, however, amounts to about 50,000 kW. This failure to exploit the available water power is mainly attributable to the abundance of native fuel oil and low-grade coal, and to the high initial capital costs which hydro-electric development entails. In 1938, therefore, about 63 per cent. of the plant installed in Rumanian public-supply stations was of a thermal type, 25 per cent. was Diesel and only 12 per cent. hydro-electric. By 1940 the percentages were 66 : 17 : 17. The table below gives figures of total capacity and output of both public and industrial stations in recent years.

2. Present Output and Utilisation

It is estimated that in 1942 output did not exceed 1,130 million kWh from a total-installed capacity of about 806,000 kW. (These totals include capacity and output of those stations in Bessarabia and N. Bucovina which were regained in 1941.)

The following table shows the probable consumption of electric power in 1942 by the various consumer groups:

	Millions of kWh Consumed	*% of Total Output*
Industrial	791·0	70·0
Household uses and private lighting ..	124·3	11·0
Public lighting ..	17·0	1·5
Agriculture	5·6	0·5
Transmission losses ..	192·1	17·0
	1,130·0	100·0

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INSTALLED CAPACITY AND OUTPUT OF PUBLIC AND INDUSTRIAL STATIONS

Year	Public Stations		Industrial Stations		Total	
	Installed Capacity '000 kW	Output in million kWh	Installed Capacity '000 kW	Output in million kWh	Installed Capacity '000 kW	Output in million kWh
1933 ..	212	325	160	268	372	593
1935 ..	217	415	218	452	435	867
1937 ..	261	537	248	540	509	1,077
1938 ..	262	568	248	580	510	1,148
1939 ..	285	582	260	630	545	1,212
1940* ..	241	548	250	617	491	1,165

* Allowance made for the loss of N. Transylvania, S. Dobruja, Bessarabia and N. Bucovina.

B. Generating Stations

As will be seen from the following list of Public Supply Plants which it is believed includes all stations with an installed capacity of 5,000 kW and over, only eight of the power stations have a capacity of more than 10,000 kW.

1. Public Supply Plants

Location	Installed Capacity (kW)	Type (Thermal or Hydro)
Bucarest : Grotăveşti	85,000	Steam
Câmpina	28,150	Steam
Gura-Ocniţei	20,450	Steam
Dobreşti	20,000	Hydro
Schitu-Goleşti	19,200	Steam
Bucarest : Filaret	16,250	Diesel
Gălma	10,700	Hydro
Sinaia	10,500	Hydro
Timişoara	9,675	87% Steam, 13% Hydro
Arad	7,840	Steam
Cernăuţi	7,675	80% Steam, 20% Diesel
Brăila	7,630	83% Steam, 17% Diesel
Floreşti	6,300	Steam
Oradea*	6,280	Steam
Sibiu	6,250	Diesel
Braşov	5,800	Steam
Galaţi	5,000	Steam
Constanţa	5,000	Steam

* This plant is now in Hungarian territory.

[18c]

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2. Industrial Generating Plants

Location	Installed Capacity (kW)	Type	Owner
Dicio Sân Martin ..	24,000	Steam	Nitrogen S.A.
Lupeni-Vulcan ..	19,200	Steam	Petrosani S.A.R.
Anina	11,780	Steam	Uzinele de Fier şi Domeniile din Reşiţa
Turda	9,400	Steam	Fabrica de Ciment din Turda S.A.
Domniţa Maria ..	9,150	68% Steam, 17% Diesel, 15% Hydro	Letea S.A.R.
Reşiţa	8,700	52% Steam, 48% Gas	Uzinele de Fier şi Domeniile din Reşiţa
Aghires, Cluj* ..	8,400	Steam	Sorecani S.A.
Schela Moreni ..	7,750	77% Steam, 23% Gas	Astra Romana

* Now in Hungary.

[19a]

377 The above list contains only the most important industrial stations, most of which also supply public requirements in their areas.

C. TRANSMISSION SYSTEM

1. Bucarest Area

Dobreşti hydro-electric station is connected with Bucarest by a 120-kV line 70 miles long. The line passes through Doiceşti, north of Târgovişte, and thence to Bucarest via Chitilla. At Doiceşti some power is stepped down to 60 kV and is transmitted to Bucarest via Ploeşti.

Schitu Goleşti thermal station, also 70 miles north of Bucarest, is connected with Doiceşti by a 60-kV line.

2. Prahova Area

The Concordia Petroleum Company owns an extensive distribution network. Its power stations supply not only the installations on the Prahova oilfields, but also the communities of Braşov, Buşteni, Sinaia, Câmpina, Ploeşti and other centres. The Gura Ocniţei station of this company is connected to Floreşti station (owned by Steaua Electrică S.A.R.), by 60-kV lines, which also interconnect with the Doiceşti transformer station of the Bucarest system. Other lines operated at 60 kV run between Floreşti and Ploeşti, and between Floreşti and Bucarest. Floreşti is linked with the Câmpina and Sinaia stations of the Concordia Company by 25-kV lines, which pass northwards to Braşov.

3. Sibiu Area

The industrial generating station Dicio Sân Martin is the chief source of electric current. It is linked with Sibiu by a 60-kV line, and with the other small stations in this and the surrounding areas by lines at lower voltages.

D. FUTURE DEVELOPMENTS

377 An official decree published in August, 1942,
371 ordered the electrification of the Rumanian State Railways, and at that same time the economies which would result from the dev-lop-

377 ment for this purpose of hydro-electric power in
371 place of the coal, which is at present used, were pointed out. A scheme providing for the construction both of hydro-electric stations and of thermal reserve stations for this purpose has been prepared, and includes initially the carrying out of the "Bicaz" project on the River Bistrița, near Tarcău. At this place a dam is to be built to form a regulating reservoir, the water from which will serve to irrigate areas at present uncultivated. In a normal year, a total output of 400-600 million kWh. is expected. Apart from supplying the requirements of the railways, power will be used in the exploitation of local raw materials and to facilitate the development of the following industries:

Wood pulp.
Artificial silk.
Electro-chemistry.
Electro-metallurgy.

Work on the Bicaz dam is to begin in the near future. The first sections of railway track to be electrified are:—

Bucarest-Ploești (59 km.—37 miles).

Ploești-Brașov (111 km.—69 miles, of which Ploești-Brașov is double-track).

Brașov-Sighișoara (129 km.—80 miles).

Up till the beginning of 1943, however, none of these projects appeared to have been begun.

The Rumanian Government is also reconsidering the much-discussed plan for the exploitation of the Danube Rapids at the Iron Gates, where the river enters Rumanian territory. If the work is carried out it will be supervised by a Rumanian-Bulgarian-German concern. The eventual output from this site should reach 3,000 million kWh. per annum, requiring an installed capacity of about 6-700,000 kW. (The largest station yet built in Europe is that on the Dnieper, having an installed capacity of 560,000 kW.) The output from the proposed station will supply the needs of South Rumania (including the railways), North Bulgaria and perhaps also East Serbia.

The important oil-field station of Grozăvești in Bucarest has been adapted to use natural gas, and is believed to have been extended.

[19c]

CHAPTER IV

ooo METALS AND MINERALS

[p. 20 contains no textual material]

A. INTRODUCTION

135 By comparison with Greece or Yugoslavia Rumania has but poor deposits of minerals, with the exception of gold, as a producer of which, before the loss of Transylvania, she ranked second in Europe to Sweden.

316 Iron-ore output is inadequate to meet the requirements of the steel industry. Bauxite output is on a very small scale, though steps are being taken to increase this and to create an aluminium industry. Production of lead and zinc, though sufficient pre-war to cover requirements, was centred in territory now ceded to Hungary, so that the country has become dependent on imports. Silver and copper production, the latter never other than on a small scale, have also suffered through territorial losses. Attempts have been made during the last few years to develop output of chrome and manganese—manganese for production of ferro-manganese for the iron and steel industry, and chrome, deposits of which appear not to have been worked before 1941, for export to Italy.

135 Deposits of mica and molybdenum have both been recently discovered in small quantities in the Mehedinți district, and the Germans are particularly interested in production of the former.

B. IRON AND STEEL

327 Full use of the Rumanian iron and steel industry is severely hampered by inadequate supplies of metallurgical coke and of iron ore, both of which have to be imported. Shortage of the former particularly has affected the industry since the outbreak of war, because, due to an insufficient supply of metallurgical coke in German Europe as a whole, Rumania has been unable to import the requisite quantities to maintain output of her blast furnaces. Rumanian plants, however, are new and the steelworks are all open-hearth or electric, which means that they are able to produce the qualities most useful for armaments.

1. Iron Ore

316 Shortage of iron ore is the fundamental weakness of the Rumanian iron and steel industry. Though various other concessions have been granted, but not yet in any way developed, only three mines have been regularly exploited, as follows:—

(a) The Ghelari deposits of limonite (47 per cent. to 54 per cent. iron) owned by the State and exploited by the Hunedoara Works.

(b) The Teliuc deposits of limonite (48 per cent. to 52 per cent. iron) and of siderite (28 to 35 per cent iron), owned and exploited by Titan Nadrag Calan.

(c) The almost exhausted Ocna de Fier deposits of poor quality limonite owned by Reșița.

316 439 Rumania has always had to import ore, chiefly from Yugoslavia, and recently from the Russian mines of Krivoi Rog as well. The following table shows Rumanian output and imports of iron ore.

Year	*Output* '000 tons	*Imports*
1936	107	80
1937	127	90
1938	137	114
1939	143	90
1940	151	52
1941	166	n.a.

[21 b]

2. Pig-Iron Production

327 Rumania had nine blast-furnaces, as under —

Company	*No. of Furnaces*	*Annual Capacity '000 tons*
Reşiţa	2	120
Hunedoara	4	90
Titan Nadrag Calan ..	1	25
Vlahiţa*	2	4
Total	9	239

*In Hungarian territory as a result of the Vienna Award.

The full operation of these furnaces is rendered impossible by lack of metallurgical coke. Only Reşiţa possesses coke-ovens, and its production is no more than 80,000 tons a year—insufficient for its own needs. The blast-furnaces of Titan Nadrag Calan and of Vlahiţa are charcoal-burning, but charcoal has now become as rare as coke. These difficulties helped to keep pre-war pig-iron production far beneath capacity, as the following table illustrates :—

Year	*'000 tons*
1936	96
1937	116
1938	107
1939	115

3. Steel Production

Rumania's annual steel capacity is about 500,000 tons of ingots and castings. The principal producers are as follows —

Company	*Annual Capacity '000 tons*
Reşiţa	210
Hunedoara State Works	200
Titan Nadrag Calan ..	100
Malaxa	65
Others	25
Total	500

All this capacity is open-hearth or electric and therefore requires large supplies of scrap (100 per cent. scrap can be used for electric blast furnaces, and for open-hearth anything between 30 and 70 per cent. scrap). As Rumania is predominantly an agricultural country, native scrap production is small, usually amounting only to about 150,000 tons per annum. Thus scrap had to be imported, as follows :—

Year	*'000 tons*
1936	37
1937	24
1938	74
1939	43
1940	6

Imports almost stopped on the outbreak of war and the situation became serious, but has to a certain extent been retrieved by the collection of battlefield scrap from Bessarabia and Transnistria, with the result that production of crude steel in 1942 should have been about 350,000 tons.

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327 compared with the following annual pre-war figures:

Year	'000 tons
1936	225
1937	241
1938	326
1939	385

4. Iron and Steel Consumption

The limited native iron and steel production, which was never sufficient to keep the consuming industries fully supplied, became an increasing impediment with the rapid development of these industries during the last few years. Iron and steel products had therefore to be imported at [439] the rate of 2/300,000 tons a year. The outbreak of war in Europe, and consequent restriction of supplies meant a falling off of imports, so that an acute shortage developed. During 1942 however, the situation improved somewhat in that Germany was reported to have sent a total of 130,000 tons of iron and steel products to Rumania.

5. German Penetration

327 A small degree of penetration into the Ru-
439 manian iron and steel industry has been achieved
473 by the Hermann Göring Werke, which, after the partition of Czechoslovakia, acquired Czech interests in Reşiţa amounting to 6 per cent., which were later increased to 20 per cent.

In 1941 a company with 50 per cent. German and the remainder Rumanian capital, was formed to take over the management of Reşiţa and its associated companies. The Malaxa Works later also came under the organisation of this company.

C. LEAD AND ZINC

1. General

328 In pre-war years Rumania was practically
439 self-sufficient in lead but not in zinc, since she possessed no zinc-smelting facilities. Her production of zinc concentrates was exported, mainly to Poland, part of the metal content being re-imported after smelting. Belgium and Poland were her chief suppliers of metallic zinc.

2. Mines and Plant

316 The mining of lead and zinc constituted only a small industry in Rumania. Part of the production, almost 50 per cent. in the case of lead, was obtained incidentally to the working of [655] gold and silver ores. The principal producers were the State-owned mines Baia Sprie, Capnic, Văratec, Valea Roşie, Dealul Crucii, and the Herja mine owned by Phœnix S.A.; all are situated in the Baia Mare district in North Transylvania. The Herja ores averaged approximately 8 per cent. lead and 14 per cent. zinc, whilst ores from the other mines averaged only 4 per cent. lead and 10 per cent. zinc.

135 There are other deposits in the Transylvanian Erzgebirge, where galena and blende are associated with gold occurrences, in the Hunedoara Banat, and Severin districts, and at Cârlibaba in the Bucovina.

328 Rumania possessed two lead smelters for the treatment of her production of concentrates: the Phœnix plant at Lucari, with a capacity for about 5,000 tons of crude lead and 3,000 tons of refined lead, and a plant at Feriza belonging to Uzinele Metallurgica din Firiza de Jos. There

[22a]

328 was no zinc-smelting capacity until 1940, when the "Sonemin" concern (Societatea Nationala de Explotări Miniere și Industriale S.A.R.) erected a plant at Copșa Mica with a capacity for 6,000 tons of crude zinc annually. The smelter has three retorts fired by natural gas, treating concentrates first roasted at the Phoenix works.

3. Pre-War Production and Trade

Ore production increased over the years 1934-1938, statistics available are conflicting, but it is certain that 1938 production in terms of lead content was not less than 7,000 tons. Smelter production also increased from 4,000 tons to about 7,000 tons and averaged about 5,000 tons over the period. Exports and imports of lead were very small.

Ore production in terms of zinc content varied between approximately 4,000 tons and 8,000 tons. The concentrates were all exported, chiefly to Poland. Metallic zinc was imported almost entirely from Belgium and Poland.

The small output of lead and zinc was of little importance other than to Rumania herself.

4. War-time Development

[728] [430] As practically the whole of the Rumanian lead-zinc industry passed to Hungary when she acquired the Baia Mare district under the Vienna Award, Rumania became largely dependent on imports for the satisfaction of her lead and zinc requirements. However, she retained the Transylvanian Erzgebirge and other areas containing lead-zinc deposits, some of which she is now endeavouring to exploit. For instance, it was reported in December 1942 that deposits in the Banat, near Agadici, and in the Hunedoara district, were being developed. The Copșa Mica zinc smelter has remained in Rumanian hands.

D. MICA

316 135 The Germans are taking considerable interest in the mica deposits discovered in the Mehedinți district, though little is believed to be of high quality. The present annual rate of production is estimated to be about 150 tons.

E. BAUXITE

135 Rumania possessed reserves of bauxite situated in the Bihor Massif and estimated by German experts in 1939 at some 40 million tons. The main deposits are located in the Poiana, Cristul Repede and Jad Valleys, and in the Galbina valley south-east of Beiuș. Small deposits exist around Remetea and Bratca, in the district around Pietroasa and near Turda.

316 Despite the size of her ore reserves, Rumania's production of bauxite has never been important, largely because of its unsuitability for the Bayer process, which is mostly operated in European alumina plants. Pre-war ouput never exceeded 10,000 tons annually, and was mostly consumed at home in the manufacture of cement and refractory bricks.

Mining operations were carried on before the war by three companies:

(a) Bauxita S.A.R., a subsidiary of the Swiss Aluminium Industrie A.G. Chippis which owned mines at Dobrești and produced small quantities of bauxite for the Rumanian cement industry.

[226]

316 (b) *Alumina S.A.R.*, a subsidiary of the German-controlled Bauxit-Trust A.G. of Zurich, which mined bauxite principally at Bratca in the Jad valley, and also owned concessions at Remetea and Pietroasa.

(c) *Aur S.A.R.*, a subsidiary of the Rumanian Mica Group, owning bauxite properties in the Sohodol region near the railway from Abrud to Turda. It supplied bauxite for the manufacture of cement and at the outbreak of war had reserved stocks for a projected alumina and aluminium plant.

The Dobreşti mines of the Bauxita S.A.R., which are within the present Rumanian frontiers, are producing at the rate of 10,000 tons annually, most of which is delivered to Germany.

F. ALUMINIUM

328 Rumania possessed no aluminium industry before the war although from time to time plans for an alumina-aluminium works were [439] discussed. A few thousand tons of aluminium, mostly in the form of semi-manufactured or finished products, were imported annually, Germany being the principal source of supply.

Aur S.A.R. have been experimenting in the production of alumina in a small pilot plant near Dicio Sân Martin, using the Seailles process which is claimed to be successful in producing alumina from low-grade bauxites of the type mostly found in Rumania.

This company is planning an aluminium reduction works of 20,000 tons capacity with an alumina plant of 60,000 tons. I.G. Farbenindustrie and the Mica group are interested, and the intention is to supply 20,000 tons of alumina annually to Germany. Up to June 1943 these projects had apparently not progressed beyond the experimental stage.

Small tonnages of aluminium, mostly in the form of semi-manufactures, are being imported from Germany, principally for the Rumanian aircraft industry.

G. CHROME

316 Rumania has reserve of chrome ore estimated at [135] 2 million tons, located at Ogradina and Plavişevița on the Danube near Orşova. These deposits were not worked before 1941, and the output for 1942 is estimated at 5,000 tons. The ore is low grade, the highest chrome content being 40 per cent. Cr_2O_3. Germany is believed to be receiving the greater part of present output.

H. MANGANESE

The pre-war annual output of manganese averaged 40,000 tons (40 per cent. Mn.), and the probable maximum output that could be obtained is 60,000 tons. The ore is located in the Eastern and Southern Carpathians with reserves estimated at 10 million tons, while the principal mines are near Jacobeni. About 30/35,000 tons of manganese ore is available for export, and is now mainly supplied to Italy and Germany, the remainder being used locally in the making of ferro-manganese. The Nitrogen company at Dicio sân Martin are reported to have extended their plant to produce ferro-manganese for supply to Reşița iron and steel works, and to Titan Nadrag Calan.

[23a]

I. COPPER

316 Apart from copper ore recovered as a by-
135 product in the mining of gold ores, there is no copper-mining industry in Rumania. There are, however, two deposits which have possibilities of future production. They are as follows:—

(*a*) At Altan-Tepe in the Dobruja, 12 miles south of Tulcea, near the Black Sea, is a deposit which is being developed by Credital Minier S.A.R. There are three areas totalling about 5,000 acres and reserves of 400,000 tons of ore averaging 1½ to 3 per cent. copper.

In 1940 development was proceeding very slowly, and it did not appear then that any production would take place for at least two years.

(*b*) At Zam, which is about 19 miles from Brad in western Transylvania, there is another deposit. The veins vary from a centimetre to a metre in width, and the grade of ore ranges from a half to 3 per cent. copper. These deposits have been worked on a small scale in the past, but no work is in progress at the present time.

Production of copper ore in Rumania, mainly from operations at various gold mines, is reported to have been 12,420 tons in 1938, and 55,108 tons in 1939.

J. GOLD

The most important area for gold-mining is in the Apuseni mountain district in Central Transylvania. The principal gold deposits lie within an area bounded by Baia De Aries, Zlatna, Sacaramb and Tebea. The chief mining centre is Brad, the nearby mines of Musari, Brodisor and Valea Morii providing most of the production. Other mining centres within the area are Sacaramb, Almas (Neagris), Rosia Montana, Bucium and Stanija.

The gold-bearing veins of the Apuseni district strike in directions between north-west and north-east and vary from a few millimetres to two metres in width. The lengths of the veins range between 300 and 700 metres and some are worked at depths approaching 600 metres from the surface. The ore is said to average 8 to 12 grammes per ton.

The largest producing company is the Societatea Mica with a production in 1940 of 2,096 kilos, and in 1941 of 2,665 kilos. In 1942, the State gold mines of Rosia Montana and Sacaramb produced respectively 150 and 238 kilos of gold.

Production in the Baia Mare district (now Hungarian) represented about one-third of normal ore output.

316 To stimulate gold production in those mines
435 carrying only small values in gold, and also to make up for the loss of output entailed by the transfer of the Baia Mare area in Northern Transylvania to Hungary under the Vienna Award, the premium on gold production in Rumania was increased from the 1st January, 1943. In addition to the fixed basic price of 211,111 lei per kilo, there is now a premium of 189,189 lei per-kilo for ore produced with a gold content of 15 grammes per ton rising to 656,389 lei per kilo for ore with a gold content of 3 grammes per ton or less. This has led to considerable prospecting for new gold deposits in various parts of the country.

K. SILVER

316 Over pre-war years Rumania ranked sixth, or when the Italian production was greater seventh,

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316 among European producers of silver. Although imports and exports of silver were irregular, and show no marked trend, it seems certain that production was adequate to meet requirements. Imports were mainly in the form of coinage, minted in London and Paris.

1. Mines and Plant

There were no mines exploited exclusively for silver and the output was to a considerable extent closely related to that of gold, with which it frequently occurs in association with copper and/or lead, zinc, pyrites, etc. Hence the geographical distribution of the main silver-producing areas was almost identical with that of gold. There were two principal districts, the "Triangle of Gold" around Brad, Abrud, Zlatna in the province of Alba, and the Baia Mare district

The larger gold mines were all considerable producers of silver, although the very largest silver producers, the Herja, and the State-owned Baia Sprie mine both in the (Baia Mare district) were only insignificant gold producers.

328 The Rumanian production of argentiferous ores was treated by refineries at Baia Mare and Zlatna and at the Phœnix refinery at Satu Mare, all of which are in the area ceded to Hungary.

2. Pre-War Production

Silver production increased at a much higher rate than gold production over pre-war years; 1937 silver output was nearly double that of 1935, and more than four times as great as that of 1932. However, there was a considerable fall from 824,480 in 1937 to 502,890 troy ounces (metal in ore), in 1938.

3. War-time Developments

728 316 A Rumanian authority has estimated that with the loss of the Baia Mare (Nagybanya) area under the Vienna Award, Rumania was deprived of as much as 87 per cent. of her silver production. Efforts are being made, however, to increase production from the considerable deposits still remaining under Rumanian control. Increased premiums are also being paid on silver mined as from the 1st January, 1943.

CHAPTER V

ENGINEERING, ARMAMENTS AND SHIPBUILDING

A. GENERAL ENGINEERING

1. General

392 The general engineering industries of Rumania are comparatively small, though to meet the increased demand for engineering products development has been appreciable during the last decade.

[439] Rumania is most dependent on imports for her supplies of better class types of engineering equipment, such as machine tools, and whilst receiving technical assistance from Germany, has during 1942 and 1943 been purchasing engineering equipment in increasingly large quantities from Sweden.

391 The rougher classes of engineering products, such as nails, screws, rivets, chains and wire are produced in Rumania and there are a few firms, such as Acta S.A.R., and Industria de Optica

391 Română S.A.R., both in Bucarest, which make precision mechanical instruments; and "Flexodo" Prima Fabrica Română de garnituri pentru frane S.A., also in Bucarest, which specialises in brakes, couplings and transmission equipment. Small tools are made by a few firms, but the quality is indifferent.

397 394 The largest individual firms in Rumania concerned with general engineering production are Reşiţa, Malaxa, Lemaitre, Vulcan and Fraţii Schiel, all of whom undertake diverse production, including locomotive and wagon manufacture, and structural engineering and boiler construction.

391 439 Rumanian firms, such as Uzinele Metalurgice Ploeşti and Concordia S.A.R. of Ploeşti, produce certain types of oil-well machinery and equipment, but the bulk of requirements, particularly of the more specialised types, have to be imported. Before the war the U.S.A. were the principal suppliers, but since the war Rumania has become dependent on Germany for this type of machinery, and in view of the importance of oil to Germany, her requirements probably receive a high priority.

2. Agricultural Machinery

407 Rumanian agricultural methods are backward, and the degree of mechanisation is low, caused by lack of purchasing power of the peasants and the high percentage of small holdings, which make the use of modern equipment impracticable. For this reason the production of agricultural machinery has not been very highly developed, though there has been some expansion since 1927—production of implements has trebled between 1927 and 1937. Production of agricultural machines, however, declined by about 60 per cent. during the same period. Between

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Between 1935 and 1937 the average annual internal sale of agricultural implements amounted to some 6,000 tons, of which two-thirds were home produced and the remainder imported. The average annual internal sale of agricultural machines during this period was 3,300 tons, of which only a fifth were home produced. Germany was the main supplier of agricultural machinery before the war, and since the outbreak of war, has continued to be so.

[437] Agricultural tractors in particular have been imported in increased quantities and it is believed that during the period 1940–1942, inclusive, some 4,000 units were imported, from Germany, as well as a few hundred from Italy.

Agricultural implements are produced in small quantities by about 15 general engineering firms, while the chief firms producing agricultural machinery are as follows :—

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Name of Firm	Location	Type of Product
1. Uzinele de Fier şi Domeniile din Reşiţa S.A.	Bocşa-Romana	Threshing machines, sifters and selectors for cleaning corn, harrows, seed-sowing machines, ploughs, etc., small agricultural implements
2. Schramm, Hüttl and Schmidt, S.A.	Topleţ (district Severin)	Threshing machines, harrows, sifters and selectors for cleaning corn, ploughs, seed-sowing machines
3. Fabricile de Maşini And. Rieger, S.A.	Sibiu	Threshing machines, harrows, sifters and selectors for cleaning corn, ploughs, etc.

397 **3. Locomotives and Rolling Stock**

The locomotive and rolling-stock industry was small, only two companies, the Bucarest branch of the Malaxa works, and the Reşiţa Iron and Steel works, at Reşiţa, building main-line steam locomotives, while three Companies built main-line wagons, namely, Malaxa, the Astra Works at Braşov and Arad, and the Franco-Romana works in Braila. The Astra works also built narrow-gauge locomotives.

The capacity of the Malaxa plant at Bucarest was probably about 80 main-line locomotives a year; the capacity of the Reşiţa works is not known, but was probably about equivalent to that of Malaxa. The total pre-war capacity of the Rumanian locomotive industry may therefore be estimated at about 150 main-line steam models a year.

With regard to wagon-building capacity, it is believed that Malaxa could build between 800 and 1,000 main-line 20-ton wagons a year, and the Astra plant about 2,500; the capacity of the Franco-Romana works is not known.

In June, 1942, both Malaxa and Reşiţa were stated to have received orders for the German Class " 50 " locomotive, one report indicating that deliveries were to begin in the summer of 1943. There has recently been some indication that these locomotives are actually under construction, although there is no information regarding the rate of production. The Reşiţa works and also Astra, are believed to have been constructing narrow-gauge locomotives for the Rumanian State Forestry Department.

There is little information regarding wagon production in Rumania since the alliance with

[25 f]

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397 Germany. It is, however, believed that tank wagons have been built to German order by the Astra Works at Braşov, and that narrow-gauge rolling-stock for the State Forestry Department has been under construction at Braşov.

398 **4. Motor Vehicles**

439 In spite of the gradual industrialisation which was taking place in Rumania in the early 1930's, by 1935 there was no motor-vehicle industry, so that the country was entirely dependent on imports. The Government, therefore, to combat the steady decline in the number of motor vehicles which had been taking place since 1930, issued a decree in 1935, offering special facilities to foreign manufacturers who would establish assembly plants. At the same time the establishment of a domestic manufacturing industry was contemplated, a plan which does not appear to have been realised.

398 Following this decree the whole of the motor-car
439 assembly industry, which was then built up, was dominated by American manufacturers, the three main assembly plants all in Bucarest, being :—

Ford Romana S.A.R., for assembly of Ford motor vehicles of all types.

Leoniia S.A., for assembly of Chevrolet cars, and representatives for General Motors.

Saral S.A.R., for assembly of Chrysler cars and others such as Dodge, De Soto and Plymouth and Fargo trucks.

From 1938 onwards several firms were established by German companies, including :—

Româno-Germanâ S.A.R., for repairs and servicing of vehicles.

Skoda Industrialâ Românâ S.A.R., for the import and sale of Skoda products, and for assembly and repair work.

Tatra Românâ S.A.R., representatives of the Ringhoffer-Tatra-Werke A.G., Prague.

Demag Românâ S.A., agents for Demag motors of Duisburg.

With the establishment of these and other affiliated German firms the automobile assembly industry gradually passed into German hands, a process which was completed in 1940 when the Americans withdrew from the country.

398 As a result of the establishment of all these firms, the number of motor vehicles increased, and in 1938 there were 34,000 vehicles of all descriptions in the country. The estimated total number of lorries in civilian use on July 1st, 1943, was 9,600, of which 6,500 with up to 3 tons capacity and the remainder over 3 tons.

398 439 Germany has, during the war period, continued to export motor vehicles to Rumania, and the industry has continued to be engaged on repair and assembly work, parts being supplied by Germany.

5. Electrical Industry

393 439 The electrical industry is small and mainly concerned with the manufacture of accumulators and cables, the former probably being largely a matter of assembly from parts supplied by the German A.F.A. company (Accumulatoren Fabrik A.G., of Berlin and Hagen). Imports in 1937, about 60 per cent. of which came from Germany and Austria, amounted to 20·9 million R.M. (716·87 million lei) which compared with a domestic output in that year of 11 million R.M. (417·3 million lei).

393 The following are the main factories engaged on production of electrical equipment :—

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Firm	Location	Product
1. Tudor S.A.R.	Bucarest ..	Accumulators and batteries
2. Fabrica Românească de Becuri Tungsram S.A.R.	Bucarest ..	Electric bulbs
3. Lumen S.A.R.	Bucarest ..	Electric bulbs (daily capacity, 7,000 bulbs)
4. Electrostar S.A.	Bucarest ..	Electric bulbs (daily capacity, 6,000 bulbs)
5. Standard Fabrica de Telefoane și Radio S.A.	Bucarest ..	Production and repair of telephone, telegraph and radio apparatus, and production of electric cables
6. Industria Sîrmei S.A.	Câmpia Turzii	Cables
7. Uz. de Fier din Reșița S.A. ..	Reșița ..	Electric motors

[26 d.]

393 439 Present requirements for the Armed Forces for such articles as wireless, field-telephones, etc., and electrical equipment for the oil companies are imported from Germany, as are civilian requirements, though imports for the latter by no means cover the demand. Sweden and Switzerland both supply small quantities of electrical goods of various types.

B. ARMAMENTS

1. General Development

719 Rumanian armament works were for many years badly organised and equipped. In 1936 the Government made the first serious attempt to organise the industry, and selected some eight engineering works for conversion to extensive war production, particularly of shells. Much of this and of subsequent expansion of the industry was carried out under the supervision of foreign concerns, notably Schneider, Skoda and the Ceskoslovenska Zbrojovka, who were not only responsible for equipping the Rumanian works, but also for providing technical and trained personnel.

By 1939 and 1940 a number of new factories came into production, and others either increased their output or adapted their organisation to war production. Despite this expansion, however, the present-day (1943) level of production cannot fulfil the whole of the needs of the Armed Forces, and Rumania has been forced to import war material from Germany, France, Switzerland and elsewhere.

The industry suffers from a lack of certain essential raw materials and of facilities for the production of machine tools, power units and other important engineering components, for which the Rumanians are largely dependent on their already hard-pressed Allies.

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2. Small Arms and Mortars

The principal small arms factory is the Cugir branch of the Copşa Mica şi Cugir Company, which was developed by Zbrojovka of Brno and came into full-scale production in 1938. Apart from the small arms section, which specialises in the ZB 30 type of machine gun, there is also a small arms ammunition plant, and a branch at Copşa Mica which was designed for the production of various types and calibres of artillery and shells.

The production of trench mortars is almost entirely confined to the Voina works at Braşov, which specialises in the Brandt 60 mm. and 81 mm. types. Vulcan of Bucarest also is believed to be engaged on similar work, but on a smaller scale. The Braşov works produce mortar bombs also, but the filling is carried out at Satu-Lung.

3. Artillery Production

Artillery or artillery-component production is believed to be carried out by some five or six firms. The Astra-Vagoane works at Braşov was taken over by the Reşiţa Iron and Steel concern in 1936 for the assembly and finishing of various types, including the 37 mm. A.Tk. gun and the 75 mm. A.A. gun, the barrels being received in the rough state from Reşiţa. There are also facilities for the manufacture, assembly and (it is believed) filling, of various types and calibres of shells. Certain tank components may also be made.

The parent company at Reşiţa, in which Skoda is believed to have an interest, manufactures guns and carriages up to 150 mm. calibre and shell cases. There is an important branch at Orăştie for filling and assembling shells. The Concordia works at Ploeşti was converted by Schneider in 1939 for the production of 37 and 47 mm. A.Tk. guns in addition to various calibres of shells and cartridge cases. The Malaxa factory in Bucarest is also engaged on gun production, but is probably of more importance as a shell producer, particularly as it also possesses an important shell filling and assembly plant at Tohanul Vechiu. The branch at Brăila is believed to have been turned over to gun and shell manufacture in recent years. According to reports, both this works and that in Bucarest produce tanks or tank components.

Apart from the shell and filling plants already mentioned, both the State Pyrotechnical Institute and the State Military Arsenal in Bucarest are important shell and small arms ammunition producers. A new works at Avrig, which was still under construction in July 1941 was to be one of the leading shell-filling and assembly plants in Rumania, accounting for some 40 per cent. of the total output. There are a number of metal-works, such as Metrom and Farola of Braşov, Laromet of Bucarest and Costinescu of Sinaia, which add a valuable contribution by supplying components to the main shell producers.

Despite its many shortcomings, the Rumanian armament industry has in recent years become one of the most important in S.E. Europe.

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4. Aircraft Industry

Rumania before the war possessed a small but active aircraft industry capable of producing about 500 aircraft yearly, which was, however, to a great extent, dependent upon foreign suppliers of aero-engines and aircraft components. There were three airframe factories, one of which also produced engines, output of the latter being sufficient to equip about two-thirds of the aircraft built in the country.

399 In the middle of 1942, under German influence, the Rumanian Government proceeded to rationalise the industry, and a Board was set up to control the country's most important armaments and aircraft factories. Under this scheme German managers or supervisors went into the aircraft factories and their main activity has since been the repair of damaged aircraft, though some new production continues. For instance, in August 1942 it was reported that an order for 200 I.A.R. fighter aircraft with 1,200 h.p. engines had been placed on behalf of the Rumanian Air Force.

[439] Rumania is still buying Italian (Savoia Marchetti) aircraft, German gliders, and various components from Germany and Switzerland.

Apart from the aircraft factories listed below, facilities for complete overhauls of airframes and engines exist at the Aviation Arsenal in Bucarest, and it has been reported that a former jute factory in Bucarest is now utilised for repair work, and that the Asam-Pipera works, also in Bucarest, are repairing engines.

Information regarding the number of workers engaged in the aircraft industry is too fragmentary to enable any estimate of their total number to be made.

[655] The main producing companies are as follows :—

(*a*) *I.A.R.* (*Industria Aeronautică Română*), the principal Rumanian aircraft company, is State-owned. It has a factory at Braşov (87 miles N.N.E. of Bucarest) for the manufacture of aircraft and aero-engines, and also produces high-precision tools of a very good quality. The factory occupies a site of some 125 acres, adjoining an airfield about 3 or 4 miles north-east of the central station of Braşov. It is a well-equipped plant and possessed considerable stocks of tools and raw materials at the beginning of the war.

The aircraft, produced before the war at a rate of about 8 monthly, consisted mainly of Potez 25 and I.A.R. 15 and 16 single-seater fighters and an I.A.R. type of four-seater commercial aircraft. The engine department produced under licence, at the rate of 25 monthly, an adaptation of the Gnôme-et-Rhône 14N. A licence was also held for Jumo 211 engines, but none of these appear to have been built.

[439] Since the war this factory has been under German control, exercised through a branch of the Hermann Göring Works. The main types of aircraft produced are I.A.R. 80 and 101 single-engined fighters and the Potez 63. Engine production appears to range between 20 and 30 a month, though the German management is trying to double that figure. Airframe output recently appears to have been about 20 monthly. In addition, a good deal of repair work is done for Germany.

The company depends largely upon imported components. It has a propeller department which, about the end of 1941, was transferred to a former paper factory in Azuga ; its output, however, does not appear to have been equal to requirements, for in July, 1942, propellers were being imported from Germany.

(*b*) *S.E.T.* (*Societatea pentru Exploatări Tehnice Industria Naţională Aeronautica S.A.R.*) known up till September 1938 as I.N.A., i.e., *Industria Naţională Aeronautică S.A.R.* This company was founded in 1937, sponsored by

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399 the Ministry of Air and Marine, but reverted in 1938 to the status of a private company. The original intention was to build airframes and engines, but in practice only four types of airframes were built, equipped with imported engines of British or French design. Output was about eight aircraft monthly. The factory is situated in Bucarest, in a two-storied building on a site of about 100 yards square, and is so hemmed in that no expansion is possible. Early in 1939 there was a proposal to build a branch factory at Târgul Ocna in Moldavia for the manufacture of aircraft parts and the construction of engines and motor-cycles, but this does not appear to have been carried into effect.

The company was reported in 1942 to be under German management. Very little information is available about its present activities, but it is believed to employ about 1,000 workers and to be engaged in repair work, as well as the manufacture of sledges and skis for the Rumanian Army.

(c) *I.C.A.R.* (*Intreprinderile pentru Construcții Aeronautice Române S.A.*). This concern was established in 1931. Its factory in Bucarest produced only ten or twelve Messerschmitt aircraft in a period of three years. Early in 1942 successive increases of capital, from 14.2 to 45 million lei, appeared to foreshadow a possible development of the company's operations, but as yet there is no sign of any such development.

Present activities are believed to consist of aircraft repair, the construction of a few aircraft for the Rumanian Air Force, and the manufacture of tubes for a Berlin firm.

C. SHIPBUILDING

396 In spite of her Black Sea Coast, the navigable rivers Danube, Dniester and Prut and other streams navigable to some extent to small craft, Rumania has never been a shipbuilding country of any importance.

From a shipbuilding and repairing point of view Galați has always been and still is the most

396 important centre, followed by Constanța, Turnu Severin and Brăila in that order, though prior to the war Galați and Turnu Severin were the only ports with yards capable of building anything larger than barges, lighters and small river craft.

Until construction was started on a dry dock at Galați in 1937 there was no dry dock in the whole country. This dock should by now be in use, excavations having been completed in 1942. Constanța has a floating dock (475' × 77') with a lift of 8,000 tons; Galați two, one of 200, and one of 300 tons lift, and Brăila one for small craft of 100 tons lift.

Prior to the war, the largest ships built were a river steamer of 420 tons and barges up to 1,700 tons at Galați, where 500/800 men were employed. Turnu Severin, employing 100 men, had a building capacity of 1,500 tons per annum in 1933, but this figure covered a number of small ships and barges.

In view of the microscopics ize of the navy—some half-dozen ships, of which the largest was a destroyer leader and the rest mainly river craft—and a merchant marine of about the same number of sea-going ships, Rumania's neglect of ship-building is not surprising. The war, however, has made a considerable difference. Yards are being expanded under German and Italian influence and a very considerable amount of money is being put into shipyards and their plant. In 1942 an arrangement was concluded by the Santiere Navale at Galați with the Hermann Göring Werke for "assistance in technical matters and in the conduct of the company," and the capital of the company was raised from 50 million to 550 million lei. In 1941 two or three tugs of between 600 and 1,000 tons were built as well as two, possibly three, U-boats completed for Rumania under supervision of Deschimag and Krupp technicians. These had been laid down pre-war with Dutch help. The construction of a large number of Tank Landing Craft, Siebel Ferries, Invasion barges, Motor Torpedo boats and possibly some small Italian U-boats has been achieved, all from pre-fabricated parts sent from Germany and Italy.

CHAPTER VI

TEXTILES AND TEXTILE FIBRES, TIMBER, PAPER AND PULP

A. TEXTILES AND TEXTILE FIBRES

248 In the years preceding the war, Rumania had been making efforts, with some success, to reduce the degree of her previous dependence on imports of textile fibres. The cotton crop of fair average quality, though still far short of the expanded mill capacity, was gradually increasing, while [236] indigenous wool supplies—though chiefly of coarse quality—were in the main enough for peasant clothing. Home-grown crops of hemp and flax were sufficient for internal needs, while jute, coir and hard hemps were imported to complete the requirements of industrial fibres.

248 439 The cessation of imports and loss of territory to her neighbours have entirely changed the supply picture, and combined with demands by Germany for imports have greatly reduced the textile "standard of living."

1. Cotton

With the development of her processing industry, Rumania had increased raw cotton imports and was successfully encouraging domestic cotton production. By 1938, imports at some 21,000 tons were about five times larger than those of 1932, and the domestic crop yield, less than 20 tons in 1932, had risen to about 600 tons. The principal sources of raw cotton were Egypt, the U.S.A., and Great Britain.

With the outbreak of war, Rumanian imports generally were curtailed, the combined total of raw cotton and cotton materials being 14,700 tons in 1940, and 13,800 tons in 1941. Thereafter, Rumania was dependent on such supplies as she could obtain by barter, lower grade cotton from Turkey and Italy and cotton and staple fibre union cloth from Italy.

248 Since 1938 the Rumanian cotton crop has continued to increase, though it is still very short of normal requirements, while the cession of some 8,000 ha. (20,000 acres) of cotton land to Bulgaria in 1940, and unfavourable weather conditions, tended to restrict the cotton-growing programme.

Prior to the territorial changes of 1940, cotton was grown close to the Danube at Craiova, and especially in the Southern Dobruja. With the cession of most of this land to Bulgaria, cotton is now mostly grown on the north bank of the Danube, at Banloc near Timişoara in the Banat and in the districts of Teleorman, Vlasca and Ialomiţa. The crop in 1939 was 2,200 tons from less than 10,000 ha. (24,000 acres) and in 1942 was estimated at 5,000 tons from about 20,000 ha. (50,000 acres). A further increase in area has been planned, but the harvest, particularly in the north, is largely dependent upon climatic conditions. The type of cotton now produced is considered superior to Indian, and similar in quality to American.

288 The chief mill centres are at Arad, Bucarest, Cluj, Iaşi, Lugoj and Timişoara; of these, Cluj is the only one to have been affected by the transfer of territory. [655] Cotton supplies are distributed under the direction of the Department of Industry and Trade by "Romacotin," which also has a monopoly of purchase from producers at prices fixed by the General Price Commissariat. Cotton may be sold only to these Government agencies to whom it has to be delivered by

288 31st December. There appears to be a good deal of passive resistance and hoarding.

Cotton spindles had increased from 35,600 in 1927 to 250,000 in 1938, and altogether there were 18 mills of some importance. Power looms in 1938 are believed to have amounted to about 16,000. The apparent disproportion of spindle compared with loom capacity was due to Rumania being a fairly important buyer of foreign yarns, imports being 23,000 tons in 1936, 27,000 in 1937, 14,000 in 1938 and 15,000 in 1939. About 70 per cent. of these yarns were of coarse cotton, called "peasants' yarns," for use in the handicraft industry only, and imported mainly from Czechoslovakia, Germany, Italy and Great Britain.

2. Wool

236 Rumania, which had the largest wool-growing industry in S.E. Europe, was also the most important consumer. Production of raw wool in 1938 was about 20,000 tons (greasy) and imports were about 1,000 tons, and of wool yarn about 2,500 tons. On account of its coarse quality, not much more than one-third of the domestic wool clip is ordinarily used in the mechanised industry, the bulk being consumed in village handicraft. Since the war and subsequent loss of territory, [233] the sheep population of Rumania is believed to have declined by some 25 to 30 per cent., and all imports have ceased, so that the industry is now entirely dependent upon the reduced domestic clip.

288 Rumania was never a large importer of woollen cloth, and the weaving industry was always more highly developed than the spinning. The output of cloth in 1936 and 1937 being 6,000 tons and 6,600 tons respectively. In 1938, there were 127,000 mechanised spindles and 4,300 looms, the chief mill centres, in order of importance, being at Buhusi (district of Neamţi), Braşov, Timişoara, Bacău, Bucarest and Sibiu.

655 Both the raw material and the woollen-textile
236 industry are nominally under strict Government
288 control, as by a decree in April 1942, the numbers of sheep and lambs and the quantity of shorn wool must be declared each year, and the wool itself must be surrendered to collecting centres at specified dates. As the due date for the 1942 collection had to be extended month by month up till January 10th, 1943, and all penalties abrogated, the success of the scheme appears to have been doubtful. No wool can be bought or sold except by permit of the Ministry of National Economy, and distribution to the mills is entrusted to an organisation known as "OFIL" (*Oficiul Lânei*), a company with a capital of 10 million lei, and including all firms concerned in the preparation of wool.

3. Hemp

248 In 1937 the area under hemp, which is grown chiefly in the Banat, was 50,000 ha. (123,000 acres) and the outturn 27,000 tons, most of which was consumed internally. Exact details of war-time plantings are not known, but are reported as 45,000 ha. (112,000 acres) and 32,500 ha. (80,300 acres) in 1941 and 1942, and the yield at about 21,000 and 20,000 tons respectively. For 1943, farmers have been urged to plant more hemp—the "national textile"—in order to cover clothing.

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248 sack and rope requirements; and a hemp and flax office has been established with a capital of 20 million lei and a credit of 500 million to distribute seed and manure, and to rent and finance retting and scutching plants. This office which is the only purchaser of these fibres, is to make no profits, and prices are to be fixed. Fifteen up-to-date plants are to be erected in 1943 in the hemp-growing areas.

[439] Although Rumania normally had little or no export balance, Germany in 1942 demanded 15,000 tons of the 20,000 tons available. How much of this was actually delivered is not known, but the shortage of hemp and other fibres has led to amazing competition between the various industries for the remaining supplies, and a hemp rope and sack factory is to be built at Chișinău [288] in Bessarabia, where the shortage of these goods is particularly acute.

4. Flax

Flax appears to be the only crop grown on a smaller area in 1943 than in 1941 and 1942, when 20,000 ha. (49,400 acres) were planted, as compared with 15,000 ha. (37,000 acres) in 1938 and 12,000 ha. (29,600 acres) in 1939. Preference, apparently, is to be given to hemp. The pre-war output was about 10,000 tons, but no reliable figures are available since 1939. Normally, there was no appreciable export of flax, but as with other fibres, the Germans appear to have been persistent in their demands. The Rumanian company, Fuiorul Cotonese, in which German capital participates, is to build flax-retting tanks at Ceretei (in the district of Dolj) and Zimnicea (in the district of Teleorman).

5. Rayon and Staple Fibre

288 There were two plants erected before the war, the "Apretura" at Popești-Leordeni and the Viscosa Românească at Lupeni, the combined daily capacity of which was 12 tons of rayon and 6 tons of staple fibre. (Approximately 4,200 tons rayon and 2,100 tons of staple fibre annually.) There has been but little expansion since, and the present annual production is estimated at 4,400 tons rayon and 2,600 tons staple fibre. Imports [439] from Italy have been 450 tons in 1940, and 2,500 in 1941. Germany promised substantial quantities, but it is doubtful whether they fully materialised. Applications for permission to erect a new pulp mill have been made by both German and Italian interests, but it seems that the Germans objected to Snia Viscosa's being granted a concession and obtained it themselves later.

6. Silk

231 Although Rumania is within the orbit of the silk belt, output is small, reaching a maximum of 20 tons of cocoons in pre-war years, and 35 tons of reeled silk were imported, principally from Italy. Silkworm breeding is located in the Banat, and in common with the drive for increased silk production in German Europe, Rumania has made efforts to increase silkworm breeding.

288 In 1937 about 5,000 workers were engaged in silk weaving (probably including artificial silk); this number was increased to 7,336 in 1941. It is reported that the cocoon crop is now delivered to the Air and Marine Ministries, presumably for making cartridge bags, etc.

7. Other Fibres

248 439 Raw jute imports averaged about 5,500 tons annually before the war, and in addition there were smaller imports of jute cloth and bags

248 439 Paper, and paper mixed with hemp, are now used to substitute jute.

Although a comparatively large producer of soft hemp, Rumania normally needed to import about 2,300 tons of other hemps for special purposes, and the sources of these imports have been severed since her entry into the war.

Comparatively negligible amounts of coir were also imported in peacetime.

288 291 434 **8. Clothes Rationing**

Unlike almost all other Enemy and Occupied countries, Rumania possesses no official clothes-ration card, although purchases are restricted to a specific number of garments per year. Since 1940 the Government, anxious to avoid the necessity for a card rationing system, has adopted various means in an endeavour to overcome the shortage of textiles, particularly of cotton and wool.

Standardisation of fabrics and fixed prices were introduced in 1940, but clothing of standardised material was frequently unobtainable since the price did not leave the retailer a profit.

Army demands soon called for a great increase in clothing production, thereby reducing the stocks and greatly raising prices of civilian clothing—those for overcoats rose by 300 per cent. and for knitted goods by 400 per cent.—and the difficulty of importing raw materials soon reacted on the industry, so that by 1941 the textile shortage, particularly of bed linen, had become serious. Later in the same year, the Ministry of Supply blocked the sale of all semi-manufactured or manufactured blankets.

Early in 1942 the Government requested the public to purchase only necessities, ordering the industry at the same time to use cotton allocations for the manufacture of standardised bed linen and clothing only. Later in 1942 it was decreed that the annual allotment of garments per head of the population was two suits or frocks, one overcoat, three shirts, 12 handkerchiefs, three pairs of socks or stockings, one sheet, three towels. The sale of standard cloth was restricted to three metres per person per annum. For this arrangement, however, clothing coupons were not issued and purchasers were requested to produce their identity cards and a signed certificate of need if the purchase exceeded 300 lei.

291 435 Non-standard articles are still obtainable, but their exorbitant prices make them accessible to a limited section of the public only. Retailers are known to have refused the sale of standard cloth even when displayed, in order to secure, if possible, the higher profit margin for non-standard goods.

[565] The members of the public most severely affected by clothing shortage and high prices are industrial workers and the poorer urban population. Though the large firms are supposed by law to supply their employees with clothing (as well as food) at cheap prices, it is thought that this is not being widely practised.

Prices of all materials for men's garments have risen to such an extent that people cannot afford to buy even such goods as are available in the shops.

248 656 To counteract shortage of clothing fibres, peasants are being encouraged by the Government to increase cultivation of flax and hemp for production of the rough cloth suitable for peasant clothing.

B. TIMBER

313 NOTE: *As for other south-eastern European countries, the statistical and other data available on forest conditions is most insufficient. It has, therefore, been necessary to refer to the works of private foresters who differ considerably in their statements and conclusions. The statements which follow are, it is believed, substantially accurate, but must be considered with a certain degree of reserve.*

I. PRE-WAR SITUATION

The forests of Rumania were one of its most important natural resources and of much value to the country's general economic welfare. A large part of the fuel requirements were supplied in wood, in addition to which the country was self-sufficient in its needs for constructional timber, etc., whilst timber exports took third place after grain and oil. The timber industry was, however, over-expanded in relation to the size of the forests, the normal yield of which although able to cover domestic requirements, was not sufficient to meet the heavy extra demands for export. The result was that over many years, up to the outbreak of the present war, the relatively high exports were only made possible by considerably overcutting the forests.

1. Area, Location and Species

137 According to the last known survey, Rumania's forest land covered about 7.1 million ha. (27,000 sq. miles), of which about 90 per cent., or 6.4 million ha., were stocked—equalling 22 per cent. of the total land surface. As was to be found in all Balkan countries, the forests were dominated by broadleaf species, the area under conifers being only 25 per cent.

The following table shows the division of the stocked forest area by regions and species, in '000 hectares:—

[31a]

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	Old Kingdom	Transylvania	Bucovina	Bessarabia	Total	% of Total
Conifers	474	829	312	—	1,615	25
Beech	820	1,528	103	2	2,453	38
Oak species	706	723	6	114	1,549	24
Sundry hard broadleaf* ..	344	141	23	54	562	9
Sundry soft broadleaf† ..	173	61	6	30	270	4
Total	2,517	3,282	450	200	6,449	100

* Including hornbeam, alder, ash, etc.
† Including lime, birch, willow, poplar, etc.

16: Great Britain G-4 (no date) 1943
ED1 Rumania ED1

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About 85 per cent. of the forests, representing those that were the best and most extensive, were located in the hills and mountains—particularly in the east and south Carpathians, the

[31c]

137 Banat and in west Transylvania; and of these 15 per cent. are not easily accessible and are unremunerative to exploit on account of heavy capital expenditure necessary to build suitable roads and railways. The forests of the plains were of minor importance, especially since they consisted almost entirely of young trees yielding firewood only.

Beech was the principal forest tree, except in the plains, where it gave way to various species of oak. The eastern Carpathians constituted the only predominantly coniferous regions.

[423] The following table shows how the forests were owned and managed; column 1 shows the area in million Hectares, column 2 the equivalent in square miles:—

	I	II	% of Total
State owned	1.9	7.3	30
Owned by communes, churches, etc.	2.0	7.7	30
Owned by companies and private persons.. ..	2.5	9.6	40

About 70 per cent. of the forests were treated as "high forests" (i.e., allowed to grow naturally) and the remainder were under varying forms of "coppice management" (i.e., allowed to grow from roots after cutting, thus producing small timber).

2. Annual Increment and Domestic Consumption

313 439 Chiefly as a result of Rumania's Agrarian Reform policy in 1924 and 1925 of clear-cutting huge forest areas to provide peasants with additional agricultural land, very large volumes of timber became available for the export market, with the result that a wrong impression was created abroad that Rumania was a country with a large export surplus of timber.

16: Great Britain G-4 (no date) 1943
ED1 Rumania ED1

313 According to V. Sabau, a leading Rumanian forester, the country's estimated domestic consumption and total forest growth in the early 1930's were :—

16: Great Britain G-4 (no date) 1943 ED1 Rumania ED1

313
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Consumption

	Per capita *solid cu. m.*	Total '000 *solid cu. m.*	Annual growth '000 *solid cu. m.*	Surplus '000 *solid cu. m.*
Firewood	0·50	9,250	12,590	3,340
Timber :—				
Conifers ..	0·17	3,122	3,230	108
Broadleaf ..	0·14	2,660	2,800	140
	0·81	15,032	18,620	3,588

[31f]

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[439]

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From this it appears that there was a surplus for export of only about 248,000 cubic metres of timber, but about 3.3 million cubic metres of firewood.

The figures for firewood growth and consumption include branches and other unmerchantable parts of the tree (*Reisholz*). Growth of these was about 3.6 million cubic metres, and although it is not known what quantity of these were included in consumption, this is not thought to be large, as such wood is mostly left in the forests. It was considered, therefore, that the greater part of the firewood surplus consisted of branches, etc., not sufficiently merchantable to be regarded as available for export.

If *Reisholz* is excluded, net merchantable growth was about 15 million cubic metres consisting of about 9 million cubic metres firewood and 6 million cubic metres timber :—

	'000 *cubic metres*
Conifers ..	3,230
Broadleaf* ..	11,787
	15,017

* Of which (in '000 cubic metres) beech 3,641 ; oak 2,933 ; and sundry 3,212.

3. Annual Cut

As far as can be ascertained, average annual felling, in millions of solid cubic metres, over a number of years was as follows :—

	Annual cut	*Of which Conifers*
1920 21 ..	16.3	3.3
1922 26 ..	20.7	5.8
1927 30 ..	19.3	5.6
1931 37 ..	17.2	4.4

This is equivalent to an average annual cut over the period 1920/1937 of 18.4 million cubic metres, an excess of 3.4 million cubic metres over net growth, or an exploitation of 120 per cent. per annum. The result of this over-exploitation was that by 1936 a large area, estimated to be as much as 3 million ha., was considered unsuitable for further production.

The conifers particularly were overcut, to the extent of an average of 50 per cent. of their growth. This was principally due to the heavy export demand for these, but can be explained in part by the fact that much of the Rumanian beech yields poor quality timber suitable only for firewood. This is shown more clearly in the details of cut by species for 1930 (the only available figures of such cutting) reproduced in Table 1 on page 33. No details of cut by trade categories are known for any year, but after firewood the largest individual item was sawlogs.

4. Timber Industry

After 1920, with the help of foreign capital, the sawmill industry was considerably over-expanded compared with the normal yield of the forests, and by 1928 there were estimated to be 570 mills in operation, which consumed in that year more than 12 million cubic metres of logs. Subsequently, as a result of world economic conditions and increasing competition on the European markets from the U.S.S.R., sawmilling activity, and with it forest exploitation, declined to some extent; but the industry was nevertheless still over-developed up to the outbreak of war.

In 1938 there were 713 timber concerns employing 43,326 people, of which 478 were sawmills with 37,693 employees; the balance consisted mostly of joinery works, furniture factories, and

½ [Cf. table, Cat. 313, p. 31 f - Analyst]
½ [" " , p. 33 a -- Analyst]

[32 a]

313 cooperage and boxmaking plants. The distribution of these is shown in Table II, although separation of the sawmills from the other industries is not possible. There were also three match factories, which covered internal requirements, and four wood-distillation plants, two of which, situated at Margina and Resita, appeared to be relatively large concerns.

5. Exports

313 439 Rumania's timber exports between 1935 and 1938 averaged 1.8 million cubic metres per annum, which was 5 per cent. of total European exports, and gave her the leading place among south-east European countries. Almost 90 per cent. of total exports were conifers, whilst, as the following table shows, sawn goods made up by far the greater part :—

Categories	*Average annual exports 1935/38 (in '000 cubic metres)*	
Sawn goods	1,280	71
Firewood	222	12
Hewn goods	113	6
Sawlogs	71	4
Boxboard, etc. ..	37	2
Pitwood	31	2
Pulpwood	26	1½
Sleepers	21	1½
Total	1,801	100

Exports were made to many countries, including South America, but the most important customers were Hungary, Germany, U.K., Syria, Palestine, Egypt and Greece. Trade with Germany in the immediate years prior to the war was tending to increase.

6. Employment

313 [464] It was estimated by a qualified expert that the forests gave direct or indirect employment to 750,000 people (about 10 per cent. of the total labour force) in forest work, transport of forest produce and in the timber industry and trade. At least 250,000 were engaged in actual forestry work, but this number probably included part-time and seasonal workers.

7. Transport

[505] [497] Water transport played but a small part in the carriage of timber, carrying only about 700,000 cubic metres per annum. By far the greater reliance was placed on transport by railways, and some 10 million cubic metres were carried by this service each year.

II. PRESENT SITUATION

Under war conditions Rumania has been faced with increasing difficulties for her supply of timber, and as most of the quantities now made available are required for home consumption, she has very little significance as an exporter.

The forest area lost by the cession of part of Transylvania is estimated to be about 1.4 million ha., and as this area accounted for 25 per cent. of pre-war production its loss is of serious consequence. It is estimated that under existing circumstances the maximum annual cut that is possible, if the present forest area is to be maintained, is 12 million cubic metres.

About 210 timber-processing concerns, of which 178 were sawmills, were also lost with Northern Transylvania, but in view of the over-expansion of the timber industry these losses are probably of less serious consequence.

313 Present fellings are not known, but a considerable shortage of forest workers and draught animals, coupled with poor transport conditions generally, are making it impossible to fell and to distribute sufficient timber to meet all home demands. These have been considerably increased by the need for timber for military purposes both in the country and at the front, and for reconstruction work in the war-damaged areas of Bessarabia, Bucovina and Transnistria. The result is a heavy and at times serious shortage of supplies.

[439] Exports, which had already fallen to about 562,000 cubic metres in 1940, further declined after the loss of Transylvania and were only some 210,000 cubic metres in 1941, but of these about 180,000 cubic metres were old accumulated stocks of sawn goods which were sold to Germany and the U.S.S.R. at the beginning of that year. No information has yet been received concerning 1942 exports, but the increasing difficulties of production make it unlikely that these were of any importance, and probably did not exceed 50,000 cubic metres.

[656] The forests are now placed under Government control and many decrees have been published regulating and defining the quantities and dimensions of trees that may be felled. Maximum prices have been fixed for all classes of timber, and a strict rationing of firewood introduced, whilst in 1942 an export embargo was placed on several categories of timber, principally soft woods.

After the cession of Northern Transylvania, German forestry experts visited the country to advise on proper forestry methods, and although there is no real evidence of what was decided, there are indications that the country is now more forestry-minded, and that more regard is being paid to reafforestation and other necessary work. These are, however, long-term policies and can have very little immediate effect on improvement of the country's present difficult situation.

TABLES

1. Details of Cut and Ownership, 1930

[423]

	State	*Communes*	*Private*	*Total*
Timber	(in '000 *solid cubic metres*)			
Conifers ..	570	2,450	2,850	5,870
Beech ..	1,080	300	480	1,860
Oak, etc. ..	350	390	520	1,260
Firewood ..	2,820	2,130	6,930	11,880
Total ..	4,820	5,270	10,780	20,870

2. Distribution of Timber Industry, 1938

	Units	*Personnel*
Total timber industry ..	713	43,326
of which :		
Sawmills	478	37,693
Distribution of total timber industry by administrative regions —		
Olt	18	1,756
Bucegi	159	7,177
Marea	3	38
Dunarea de Jos ..	29	932
Nistru	3	109
Prut	67	6,222
Suceava	110	6,555
Mureş	155	9,196
Someş	83	7,163
Timiş	86	4,178

C. PAPER AND PULP

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With a normal consumption of only 3·3 kg. (7¼ lb.) of paper and board per head of the population, compared with 37 kg. (81·4 lb.) in Great Britain, Rumania is one of the smallest consumers in Europe. The country's requirements in ordinary grades of paper and board are well covered by about thirteen paper mills, some of which also manufacture both chemical and mechanical wood pulp.

Newsprint requirements are met by home production.

Pre-war (1936) production of chemical pulp was 37,500 tons and of mechanical wood pulp 9,000 tons, while the output of paper in the same year was 48,000 tons, and of cardboard 10,000 tons.

[439] Small imports of sulphate pulp normally came from Sweden, and of mechanical wood pulp from Austria.

In 1940 the production of paper rose to 105,150 tons, of which little more than half was sold internally and about 90 per cent. came from mills in the Rumanian Paper Cartel.

By the early part of 1942 a critical situation had arisen due to scarcity of fuel and raw materials.

The principal pulp and paper mills having four or five machines each and an annual capacity each of 24 30,000 tons of paper are as follows: —

(*a*) Fabrica de Celuloză Zărnești S.A., Brașov.
(*b*) "Letea" Fabrica de Hârtie Bacău.
(*c*) Fabrica de Hârtie "Bușteni" (C. & S. Schiel) at Bușteni.

The remaining mills, about ten in number, are much smaller, and three of them, with a combined capacity of 67,000 tons per annum, have come under Hungarian ownership following the Vienna Award.

Zărnești Cellulose Mill is of primary importance as the main source of chemical wood pulp for domestic consumption and export, and it is believed that this factory is now making special bleached cellulose for the manufacture of explosives. Elaborate machinery imported from Germany was installed with fair promptitude.

The utilisation of reeds from the Danube delta has not yet (July 1943) begun, although much publicity has been given to this project in the local and German press, but a concession has been granted to a German-Rumanian Society, "Delta A.G." The Zărnești and Bușteni Paper Mills are participating and investigations are under way. A similar concession asked for by the Snia Viscosa concern in Italy is said to have been refused.

[434] In 1942 consumption of paper in the first half of the year amounted to over 90 per cent. of production, but in the second half-year the Cabinet imposed fresh restrictions on consumption in order to remedy the increasing shortage.

[439] There is a considerable trade with the Italian Government in bituminised cardboard for walling and roofing military hutments, and it is believed that a part of these are imported from Scandinavia and exported (after bituminising) to Italy and the U.S.S.R. for the Italian Expeditionary Forces. It is also likely that since the bombing raids on Italy extra demands have been made for repair purposes.

[33 b]

CHAPTER VII

OTHER INDUSTRIES - CHEMICALS, RUBBER, LEATHER, &c.

A. THE CHEMICAL INDUSTRY

381 Though the chemical industry of Rumania ranks lowest among the chief industries on the basis of production value, it is better and more comprehensively developed than in the other south-east European countries. Production is chiefly confined to heavy chemicals manufactured largely from indigenous raw materials. Most of the factories are situated in Valachia, Transylvania, and around Timişoara in the Banat.

1. Acids and Alkalis

385 317 Rumania produced annually 45,000 metric tons of sulphuric acid, which was sufficient to cover the pre-war requirements of the country, which were mostly for the refining of mineral oil. The manufacture was in the hands of some six firms, of which the chief producer was the **Mărăşeşti** S.A.R., with plants at **Mărăşeşti**, Valea Călugăreasca and Braşov. Three of the smaller plants producing sulphuric acid with a total annual capacity of 18,000 tons, representing 35 per cent. of the total, were acquired by Hungary. The necessary sulphur was obtained from Rumanian pyrites mines located at Baia Mare and Baia Sprie in N. Transylvania, acquired by Hungary in 1940. Since that date supplies have been derived from Fundul Moldovei, Zam, Sacaramb and Altan Tepe, though not in sufficient quantities to cover requirements. Shortage of sulphuric acid has been partly eased by imports from Italy.

The alkali production is normally sufficient to yield a surplus for export. Rock salt, of which there is an important domestic production, forms the basis of the alkali industry.

Salt Production

	metric tons
1939	374,000
1940	323,000
1941*	267,000

* Reduced 1941 production is due to loss of salt mines to Hungary at Ocna Sugatag, Ocna Dejului and elsewhere.

385 Soda ash is made solely by the Solvay Company at Ocna-Mureşului, where the annual capacity of the plant is estimated at 50,000 metric tons. Caustic soda is made by the Solvay-Company and by S. A. Nitrogen at Dicio Sân Martin. Production of alkali in 1939 and 1942 (estimated) was :—

	1939	1942
Soda ash ..	38,000	40,000
Caustic soda ..	11,800	15,000

Requirements of hydrochloric acid were about 3,000 to 3,500 metric tons a year, and were completely met by home production. Production of sodium sulphate, a by-product in the manufacture of hydrochloric acid, amounted to 2,650 metric tons in 1939.

The most important sulphate made in Rumania before the war was that of copper, production of which averaged 5,700 metric tons between 1933 and 1936, increasing to 12,400 tons in 1937. The chief producers were the Mărăşeşti and the Phœnix chemical works (the latter in ceded territory).

[439] There is at present an acute shortage of copper sulphate, the loss of which as a fungicide is particularly felt. Germany is reported to have supplied small quantities in return for exports of copper scrap.

2. Fertilisers

387 Since the consumption of chemical fertilisers in Rumania is one of the lowest among the European countries, their production is comparatively small.

Synthetic nitrogen compounds are manufactured by the S.A. Nitrogen at Dicio San Martin, where the company has a small Fauser synthetic ammonia plant and a calcium cyanamide works. No recent reliable data exists regarding output, but before the war the Fauser plant is stated to have treated 200 metric tons of nitrogen annually, and the production of cyanamide amounted to about 300 metric tons. The quantity of superphosphate manufactured averaged about 8,000 tons before the war. Owing to the cutting-off of supplies of rock phosphate, production of superphosphate is now probably nil. There was no domestic production of potash salts, and pre-war imports were very small.

3. Wood-Distillation Products

314 This industry is almost entirely controlled by
385 Margina Resita destilariile de lemn unite S.A.R., Timisoara. Prior to the outbreak of the war about 170,000 tons of beech wood were worked per year. The following is a list of some of the products obtained, showing the average annual tonnage produced :—

Wood charcoal	31,000
Methanol	2,000
Calcium acetate	1,400
Acetic acid	50
Formaldehyde	130
Acetone and derivatives ..	1,100

4. Soap and Glycerine

388 Rumania is an important producer of sunflower,
389 rape and pumpkin seeds, and has, therefore, an ample supply of oil for her soap industry. The production of soap amounts to 33,000 tons and is in the hands of several factories, the only one of which is of striking importance being Stella S.A. of Bucarest. Glycerine production, which is a by-product of the soap industry, amounted to 350 tons, most of which was utilised by the explosives industry. Since the war the quality of the soap has markedly deteriorated. Though the present ration of 250 grams per head per month is a fairly generous one, it is not fully met and distribution is very bad. The production of glycerine is estimated to have fallen to about 200 tons, while imports amounted to 160 tons in 1941 compared with an average of about 240 tons in 1936-1938.

5. Paints and Varnish

386 The paint and varnish industry, in which some 60 small firms are engaged, is sufficiently well developed to meet—under normal conditions—the greater part of Rumanian requirements in this particular sphere. The industry is, however, still dependent to some extent on imports of oil paints.

6. Pharmaceuticals

278 Production of pharmaceuticals is on a very small scale, being sufficient to meet only about one-third of requirements, the remainder being covered by imports, mainly from Germany.

7. Explosives

389 The explosives industry is quite inadequate to cover wartime requirements, and these have to be

389 met by the Axis. The chief products made in the country are mining explosives and nitro-cellulose powder.

B. THE RUBBER INDUSTRY

383 Taking Axis Europe as a whole, the Rumanian rubber industry is of little importance. There is manufacturing capacity for motor tyres located at Floresti and at a much smaller plant at Brasov. The total number of workers employed in normal years was about 4–5,000, a large number of them being engaged on footwear manufacture, which was the chief product of the industry.

1. Raw Materials

Rumanian requirements of raw rubber had been increasing steadily in pre-war years until in 1938 they amounted to over 2,000 tons all of which were imported from British Malaya and the Netherlands Indies. It is probable that several firms produced reclaimed rubber for use in their own factories. Some of the scrap for this purpose would be of domestic origin. Import figures in [439] metric tons were :—

	1936	1937	1938
Crude rubber	1,273	1,835	2,000
Reclaim	181	214	33
Waste and scrap	305	581	500

Rumania had a small production of soft carbon black of the type suitable for miscellaneous uses, but there was no production of the hard carbon black necessary for tyre manufacture. This and other requirements of rubber chemicals would normally be obtained from the U.S.A., the U.K. and Germany. Supplies of sulphur were imported from Italy and Germany.

2. Principal Factories

The Rumania rubber industry comprises a large number of concerns producing footwear and general rubber goods, in addition to two factories concerned mainly with tyre manufacture. The larger tyre plant is owned by Baniloc A.G., a company founded in 1937 with a capital of 200 million lei and supplied with technical assistance by Goodrich, U.S.A. The plant, located at Floresti, was only completed in 1939. Its estimated raw rubber requirements were 1,500 tons per annum, and it has the capacity to produce 6,000 motor and truck tyres monthly, sufficient to cover 75 per cent. of normal Rumanian requirements. This capacity included some plant for making aircraft tyres. The other plant which produces tyres is on a much smaller scale, and is owned by Fabrica de Cauciuc at Brasov, with a normal capacity of 10–20 truck tyres daily.

According to the latest information, both these tyre plants were still in production at the beginning of 1943, when Baniloc were reported to be producing between 100 and 200 motor tyres daily with technical assistance from Continental, Hanover, while the Brasov plant was producing 12 to 15 lorry tyres daily with technical assistance from Semperit, Vienna.

3. Imports

383 439 The chief item of imports in pre-war years was motor tyres, amounting to between 800 and 900 tons per annum. Since at that time Rumania possessed virtually no capacity for producing any of her own requirements, this figure approximately represents normal domestic needs. Footwear requirements, on the other hand, were normally almost covered by the large and expanding domestic output, so that imports were unimportant.

[35a]

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[439]

The figures of imports in 1938 in metric tons were as follows :—

Motor tyres	867
Motor tubes	69
Rubber footwear	221
Soft rubber unvulcanised	32
Rubber solution	27
Miscellaneous	173

4. Synthetic Rubber

It is planned to erect a plant with a capacity of 3,000 tons per annum in co-operation with German interest and using natural gas as the raw material. There is a second plan by independent interests to erect another plant at Ploesti using natural gas or oil as a starting point. Both these projects, however, are as yet in their initial stages and Rumania is, at present, entirely dependent on Germany for supplies of synthetic rubber.

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5. Cultivation of Rubber-bearing Plants

Rumania has been experimenting with the planting of *Kok Saghyz* or Russian dandelion. During 1942 an area of 180 hectares (450 acres) was planted, which it is estimated will eventually yield between 20 and 30 tons of rubber. It is planned to increase the planted area in 1943, but it will be some time before any results of these measures will help substantially to alleviate the Rumanian supply position.

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6. Present Position (July, 1943)

Although Rumania has sufficient manufacturing capacity to supply most of her essential needs, she lacks supplies of raw materials. The industry is dependent upon Germany for supplies of synthetic rubber and some of her essential requirements of manufactured goods for her armed forces, such as aircraft tyres and some heavy truck tyres, are also being supplied by Germany.

C. HIDES, SKINS AND LEATHER

(I.) Pre-War Period

1. General

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Rumania's plentiful supply of livestock places her in a comparatively favourable position for hides, skins and leather and the pre-war slaughterings were approximately as follows —

	'000 *Head*
Cattle	487
Calves	500
Horses	100
Buffaloes	32
Sheep	1,374
Goats	190
Pigs	798

Of the leather producible from the above animals, cattle, horse and buffalo are the most important, being used to a large extent in the manufacture of sole leather, which is the backbone of the industry.

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Rumania is not entirely self-supporting, although home-production enables her to restrict imports to a minimum. Imports and exports in 1937 were as follows —

	Imports	*Exports*
	tons	
Hides of cattle (including calf and horse)	2,630	Nil.
Other hides and skins (including sheep and pig skins)	340	558
Leather (including waste)	62	410

[35b]

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237 [439] The imported hides are in all probability largely heavy hides needed for sole leather. Those designated as "other hides and skins" are not important in tonnage, and exports are almost certainly all sheep and pig. The exports of leather are not very important, as they consist almost entirely of leather waste.

Total supplies of leather, available from internal slaughterings of cattle, calves, horses and buffaloes, together with net imports, would be about 12,000 tons, of which 10,11,000 tons are derived from local hides and skins.

Part of the sheepskins were dewoolled and turned into leather, the wool being sold separately but a considerable number of skins was used as fleece-lined jackets by the peasants. The total quantity of leather from the locally slaughtered sheep would, however, not exceed 750,1,000 tons.

Unlike Western countries, the pigs in Rumania are flayed, and the skins tanned, so that the pigskin industry is certainly of material value, although not of major importance, compared with Rumania's total leather production.

2. Manufactures

295 Rumania's leather trade made rapid strides in pre-war years and, as the bulk of the leather was made into footwear, an important increase in this production was noticeable. Although no official statistics are available, it is estimated that Rumania produced 45,000,000 pairs of leather shoes in 1936 and, in addition, considerable quantities of peasants' footwear were manufactured in country districts.

The industry at that time consisted of about 20 machine shoe factories, six of which were owned and controlled by tanneries, mainly centred in Cluj, Timisoara, Bucarest and Oradea. In addition, numerous small shops existed throughout the country in which shoes were made by hand. With the loss of Northern Transylvania the machine-shoe centres of Cluj and Oradea went to Hungary.

3. Tanning Materials

282 [439] Rumania has in the past relied on other countries for practically all her tanning materials and extracts. She used to import about 8,000 tons of different extracts, about 90 per cent. of which were re-exported from the U.K., probably quebracho and wattle extract. Yugoslavia supplied her with about 2,000 tons of extract, presumably oak and chestnut.

(ii.) War-time Developments

1. General

Though Rumania has suffered during the war from a leather shortage, partly on account of reduced internal production, but more especially because of the increased requirements for the Armed Forces, this shortage has not been so severe as in most European countries.

It has been reported that the leather production in 1940 was 9,200 tons, but that the supply of raw hides fell from 19,000 tons pre-war to 11,000 tons in 1941. This is a severe drop, even assuming that the 19,000 tons included imported hides. A substantial decline in the available supplies of leather has, however, certainly taken place owing to the curtailment of imports, to clandestine slaughterings, and to exports of live cattle to the Axis.

An indication of the extent of supplies allocated for Army needs was contained in an official announcement that 60 per cent. of all untanned

282 cattle hides collected in September, October and November, 1941, were for this purpose. The remaining 32 per cent., plus the horsehides, pigskins and goatskins, could be used for civilian purposes. The result was that very soon insufficient sole leather was available for civilians, and repairs to footwear became difficult.

282 At present 80 per cent. of the cattle hides
656 weighing over 16 kilos (35 lb.) and 20 per cent. of the hides weighing less than 16 kilos, are reserved for the Army. This leaves the civilians very short of sole leather, normally manufactured from heavy hides.

At the end of 1941, the Ministry of Supply ordered the registration of all leather stocks, and thereafter leather could not be sold without a permit. The entire purchasing and control of raw hides and skins and also the distribution of leather was placed in the hands of the "ORAP" (*Oficiul Romăn de Aprovizionare și Distribuire a Produselor de Piele*).

In the autumn of 1941 private dealings in sheep and lambskins were forbidden, the Army Supply Minister having sole right of disposal. Owing to the comparatively important domestic output such a measure should not have been necessary, but was due to the Rumanian, and probably German, demands for warm clothing on the Russian front. Evidence received in 1942 shows that 80 per cent. of the skins are now reserved for the Army.

In July, 1942, leather transmission-belting, etc., was brought under control and made subject to certain restrictions.

295 Civilian rationing of footwear was introduced
434 early in 1942 and new shoes could be sold only against permits issued to persons declaring possession of only one other pair of serviceable shoes. Repair cards were also issued. Requisition cards for new shoes are limited to one a year, and repair cards to one every four months. Children under 14 years of age can obtain two requisition cards yearly for new footwear.

The issue of permits does not, however, guarantee footwear supplies, and only about 50 per cent. of repair or purchase demands appear to be met.

The above regulations have been slightly modified from time to time, but remain intrinsically the same. The production of footwear of substitute materials, such as wooden soles, soles of artificial leather, leather waste, buna, etc., has gradually increased.

295 Despite the various government regulations
435 the footwear Black Market flourished, and while the average pre-war price for a pair of men's shoes was 800 lei, in October, 1941, the official prices were fixed at about 1,500 lei for a standard pair of men's shoes and about 1,200 lei for a standard pair of women's shoes. In March, 1942, however, the Black Market price for men's shoes was 7,8,000 lei a pair, and this has now gradually risen to 10/12,000 lei. Complete soleing and heeling of men's footwear costs 1,250 lei officially, and women's 1,000 lei. The official price of soleing leather is 530 lei per kilo, whereas the Black Market price is 34,000 lei.

2. Tanning Materials

282 Before the war Rumania never made use of her
439 own barks for tanning, as it was more economical to import extracts from overseas. During the war she has made attempts to employ her oak, chestnut, spruce and pine barks for tanning materials, but

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without much success, and has thereby reverted to her former practice of importing iron.

In February 1942 it was reported that with imports from Italy, Turkey and Croatia, Rumania had an eight months' supply in hand.

Under the 1942-43 Italo-Rumanian agreement Italy is providing her with 1,750 tons of chestnut extract, 1,000 tons of sumach and 735 tons of other materials. Turkey also agreed to supply her in 1942 with 1,000 tons of valex and 2,500 tons of valonea.

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D. BUILDING MATERIALS AND CEMENT

The building materials industry in Rumania is on a small scale and not highly mechanised, employing a total of 16,000 workers in 1937, while the value of production in that year amounted to 1·6 milliard lei, about 2½ per cent. of total industrial production. In the decade before the war cement, which is the most important branch of this industry, had a steadily increased output reaching in 1939 a total of 531,000 tons, with a 800,000 ton capacity. Small quantities had to be imported.

The most important cement firms are at Fieni, Vodă, Turda, Dudești, and Fieni. Since the war due to limited building activity, consumption of cement has decreased, and was reported to have been 314,000 tons for the first ten months of 1942, the bulk of which was used for military requirements.

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After the recapture of Northern Bucovina and Bessarabia in mid-1941, a considerable amount of repair work had to be undertaken as a result of war destruction; but at the beginning of 1942, due to raw material and labour shortage, all further reconstruction in these two provinces was forbidden. Later, in February 1943, a decree

339 [656] came into force forbidding construction throughout the country for the duration of the war of private buildings requiring either iron, steel girders, sheet-iron or other sheet-metal roofing.

In 1942 production of bricks and tiles was reported to have been sufficient to meet the reduced requirements. During the war period there have been considerable exports of asphalt and tarred board for roofing, the latter mainly to Italy. 439

E. GLASS

323 The glass industry employed 6,000 workers in 1937 in 19 glass factories and 20 glassware factories, the most important of which were the Vitrometan Fabrica de Sticlarie S.A. of Mediaş and the Fabrica de Sticlarie Turda S.A. of Turda, both producing sheet-glass and hollow-ware.

Production did not cover the requirements of specialised types, which were imported from Germany and Czechoslovakia. During the war period window-pane production has been adequate for requirements and small quantities have been manufactured for Germany; while under the 1942 Turco-Rumanian Trade Agreement Rumania agreed to supply both window-panes and glassware.

F. CERAMICS

The ceramic industry employed 1,600 workers in 1937 in 33 factories, and the value of production was 112 million lei. Most of the raw materials for this industry are found in the country, and there has been no difficulty in supplying these during the war period. Apart from the mechanised industry, ceramics are produced in normal times on a comparatively large scale by the peasants. The principal factories are the Nitrogen S.A. in Tărnăveni, the Crinul S.A. in Timişoara and the Uzinele Ceramice S.A. in Ploeşti.

[376]

CHAPTER VIII

TRANSPORT AND COMMUNICATIONS

[p 38 contains no textual material]

A. RAILWAYS

I. Pre-War Conditions

1. Communications

496

Before the outbreak of the present war, the Rumanian State Railways' system was as follows:

	km.	miles
Total	11,375	7,053
of which:		
Standard gauge ..	10,715	6,643
Narrow gauge ..	660	410

More than half of this mileage had been acquired following the 1914–18 war, when

5,324 km. (3,299 miles) in Transylvania
1,234 km. (765 miles) in Bessarabia
555 km. (344 miles) in Northern Bucovina

were transferred to Rumania. As a break of gauge existed between the railways of old Rumania and those in the former Russian State of Bessarabia, conversion to the 4ft. 8½in. gauge had to be undertaken. Short sections of line are owned by 17 private companies, but all the lines of any importance are State-owned.

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Rumania was relatively well furnished with railway communications. The length of railway line per 100 sq. km. in 1936 was 3.8 km. (6.3 miles per 100 sq. miles), the same as in Yugoslavia, while in Bulgaria it was 3.2 km. (5.1 miles per 100 sq. miles), and the commercial requirements of the country were adequately served thereby. Since the 1914–18 war, the difficulties connected with the unification of three different systems of railway (Hungarian, Russian and Rumanian) were gradually overcome, and with the conversion of the Russian-gauge track in Bessarabia, the railway organisation became more or less standardised. Three of Rumania's five frontiers were crossed by main lines and the other two by branch lines.

1. *Polish Frontier*

This was crossed by the main Bucarest-Cernăuți line at Cernăuți, and was formerly the direct line for through traffic from Bucarest to Warsaw, but the conversions of the railway system in Russo-Poland from standard to 5 ft. gauge in the autumn of 1939, rendered through traffic to Warsaw by this district route impossible without transhipment.

2. *Hungarian Frontier*

The main lines Bucarest—Arad—Curtici and Bucarest—Oradea—Episcopia Bihor provided direct communication between Bucarest and Western Europe via Budapest.

2. *Yugoslavian Frontiers*

Through traffic from Bucarest to Western Europe via Italy and the Simplon Tunnel was served by the main-line route, Bucarest—Timișoara—Jimbolia.

4. *Bulgarian Frontier*

The only direct railway connection between Bucarest and Sofia was by a roundabout route from Bucarest through the Dobruja. The shortest route was by train to Giurgiu, whence ferry steamers cross the Danube to the Bulgarian railway at Ruse.

5. *Russian Frontier*

There was only one frontier crossing, at Tighina—Tiraspol, served by the main line to Iași,

[39 b]

496 whence there was a slow train service to Tighina. Change of gauge took place at Tighina and Tiraspol, necessitating transhipment of both passenger and goods traffic at one or other of these points.

From a strategic point of view, the railway system of Rumania suffered from three main disabilities :—

(*a*) Out of the total of 11,375 km. (7,053 miles) only 491 km. (304 miles) were double tracked.

(*b*) The railway system of the country was originally constructed to serve the needs of Rumania and Hungary individually, and on account of topographical and political difficulties communications between the two countries were limited to the minimum requirements. As a result, communications across the Carpathian Mountains were quite inadequate, consisting only of three single-line railways.

(*c*) The railway system of Transylvania was constructed with a view to the defence of the old Hungarian eastern frontier along the Carpathians, and is, in consequence, particularly ill-adapted for north-to-south movements.

[655] The Rumanian State Railways (*Regia Autonomă a Căilor Ferate Române*—in short C.F.R.), set up in 1929, was directed by an Administrative Council in Bucarest, consisting of 11 members, including a representative of the Minister of Communications. In addition, there was a delegate of the Minister of War and a Government Commissioner with an advisory voice and the right to veto all decisions of the Council. For administrative and maintenance purposes, the railways were divided up into four separate Managing Directions at Bucarest, Timişoara, Cluj and Iaşi.

2. Principal Routes

The principal railway routes are set out below :—

1. Jimbolia (Yugoslav frontier)—Timişoara—Craiova—Bucarest, of comparatively recent reconstruction and relatively well maintained.

2. Curtici—Arad—Vintul-de-Jos—Sighişoara—Braşov—Bucarest, which is a main route from the Hungarian frontier.

3. Episcopia Bihor—Cluj—Teiuş—Sighişoara—Braşov—Bucarest, a main route from the Hungarian frontier Episcopia Bihor (Budapest and Vienna) to Bucarest, using, between Teiuş and Bucarest, the same line as route 2.

4. Orăşeni—Cernăuţi—Paşcani—Adjud—Mărăşeşti—Buzau—Ploeşti—Bucarest. This was formerly the direct route between Bucarest and Warsaw, and is a natural route for traffic between Eastern and Central Rumania (including the oilfields) and Eastern and Northern Germany.

5. Chişinău—Iaşi—Tecuci—Buzău—Bucarest. This line, as from Iaşi, was reconstructed a few years ago.

6. Chişinău—Reni—Galaţi—Brăila—Buzău—Bucarest.

7. Constanţa—Feteşti—Ciulniţa—Bucarest. This line, connecting Bucarest with the Black Sea port of Constanţa, was reconstructed a few years ago.

[39c]

CHAPTER VIII

496 8. Bucarest—Oltenița, a port station on the Danube.

9. Bucarest—Giurgiu, an important Danube port opposite Ruse (Bulgaria).

10. Arad—Oradea—Satu Mare—Halmeu—Câmpulung pe Tisa—Sighet—Valea Viseului—Vișeul de Sus—Borșa.

11. Satu Mare—Baia Mare—Jibou—Dej—Apahida.

12. Dej—Beclean—Ilva Mica—Vatra Dornei—Dărmănești.

3. Staff

497 In 1938 the personnel of the Rumanian State Railways was as follows:—

General and Divisional Headquarters	8,037
Maintenance and Supervision of Permanent Way	13,739
Engine Crews	4,705
Sheds and Workshops	7,584
Main Workshops	21,260
Stations	20,947
Train Staff	6,081
Various	2,322
Total	84,666

4. Locomotives and Rolling-Stock

493 In 1939 there were 3,383 standard-gauge locomotives (2,899 tender type and 484 tank type). As regards narrow-gauge locomotives, figures for 1939 are not available, but in 1938 there were 108 (17 tender type and 91 tank type). Railcars in 1938 totalled 236, of which 8 were steam-operated.

ROLLING-STOCK 1938

(1939 *figures, where available, in brackets*)

	Standard Gauge	*Narrow Gauge*
Total No. of Wagons	62,487	920
Ordinary Wagons	53,327 (53,320)	917 (881)
of which covered	22,670 (23,233)	227 (153)
open	29,437 (30,097)	790 (728)
Special Wagons	1,666	3
of which Tank (state owned)	1,142	3
Privately owned	8,714	—
of which oil tank	8,613	—
Passenger Coaches	3,731 (3,449)	137 (150)

In view of the importance of the oil traffic, it should be noted that there were about 10,000 tank wagons (8,500 owned by the oil companies and 1,500 by the railways).

Coal is the principal fuel used by the railways, consumption of various fuels in 1938 being:—

Coal	944,000 tons.
Brown Coal	501,000 tons.
Heavy Oil	233,000 tons.
Petrol	7,000 tons.
Wood Fuel	19,000 cubic metres.

5. Traffic

497 The following figures relate to the year 1938—

(a) *Goods (Standard and Narrow-Gauge Lines)*

No. of tons	*Tons—km.*	*Average Haul per Ton—km.*
27,680,179	5,795,041	209

The principal goods normally conveyed by the Rumanian State Railways are petroleum and petroleum products, coal, firewood, timber, grain and building materials.

[40a]

(b) *Passengers*

497 In 1938, 48.7 million passengers were carried over a total distance of 3,765 million km. (2,339 million miles) for an average journey of 77 km. (48 miles).

II. War-time Changes

1. Territorial Changes

496 722 Few railways have so far undergone greater changes, both on account of territorial transfers and alterations in traffic flows as a result of the war than the Rumanian State Railways. Firstly, in 1940 the system suffered considerable dismemberment, in June 1,665 km. (1,032 miles) of standard and 65 km. (40 miles) of narrow gauge in Bessarabia and Northern Bucovina were taken over by the U.S.S.R.; then in September the Vienna Award resulted in the transfer of a large part of Transylvania, including 1,750 km. (985 miles) of standard and 355 km. (220 miles) of narrow gauge line to Hungary, and 70 km. (43 miles) of the Southern Dobruja line were ceded to Bulgaria. Following the German attack on the U.S.S.R. in June, 1941, the Bessarabian and Northern Bucovina lines were recovered in the early autumn of that year and, at the beginning of 1942, the Germans placed the control and operation of the railways in the newly created province of Transnistria in the hands of the Rumanian State Railways. The Transnistrian system consists in essence of the Odessa-Zhmerinka section of the Odessa-Kiev-Lwow main line and all branches (including the Zhmerinka-Mogilev line) on both sides as far as the Dniester (frontier with Rumania) in the west, and the Bug (frontier with the Ukraine) in the east.

Apart from Bessarabia, Northern Bucovina and Transnistria, the Rumanian State Railways have not so far suffered any substanti[illegible] direct physical damage. The Russians on their occupation of Bessarabia and Northern Bucovina in June 1940 at once converted all lines from the standard European to the Russian gauge; a task which was made easier by the fact that the system had, prior to 1920, been Russian gauge. The Russians, in spite of the resultant difference in gauge, insisted on taking over all standard-gauge locomotives and rolling-stock formerly in use in the territories, even where this had already been withdrawn by the Rumanians. The Russians during their subsequent evacuation of these provinces, and also of Transnistria, withdrew or destroyed virtually all their locomotives and rolling-stock, and on the whole effectively damaged or destroyed the track, bridges, stations and equipment. The Rumanians, therefore, found themselves faced with the task of reconstructing and reconverting back to standard gauge the lines taken over, and of providing the necessary locomotives, rolling stock equipment and staff to work the traffic. The Transnistrian system from the railway point of view represented a liability rather than an asset.

It was not until the end of 1941 that the lines in Bessarabia and Bucovina were all re-opened, and until early in 1942 that traffic was being worked to and from Transnistria. The Transnistrian system possesses a measure of autonomy, believed in practice to be mainly legal and financial, but for practical purposes the lines are operated as an integral part of the Rumanian system. The transfer of the Transylvanian lines to Hungary and the Southern Dobruja line to Bulgaria were effected without any physical damage and, as far as is known, no locomotives or rolling-stock were handed over by the Rumanians in either case. The change was primarily administrative, but

496 722 normal traffic was disorganised for several weeks owing to troop movements, the transfer of population, evacuation of equipment and other problems incidental to the transfer of the territory.

497 722 All these changes of necessity caused considerable problems, particularly administrative and considerably affected traffic working. Of the four Divisions in 1939, most of the Cluj Division including Cluj itself and the Tunel-Cluj-Oradea section of the Bucarest-Ploeşti-Cluj-Oradea-Budapest main line, together with part of the Timişoara Division, were transferred to Hungary. Half of the Cernăuţi Division, including Cernăuţi itself and a section of the Bucarest-Ploeşti-Cernăuţi-Lwow main line, was transferred to the U.S.S.R., and parts of the Bucarest Division were transferred to all three countries. The operation of the system was reorganised and centralised under a military directorate in Bucarest, to which German liaison officers have been attached to co-ordinate working and ensure that all German requirements are met. While these officers must presumably have certain powers, and there are also German officers—thought to be equivalent to R.T.O.—at the more important junctions and traffic centres, there is no evidence that the Rumanian State Railways have ever been under direct German control, or that their autonomy has been seriously impaired.

The Rumanian Authorities have had to cope with all these territorial changes and resultant administrative problems during a period when traffic was both considerably heavier than, and the flows entirely different from, before the war. The closing of the sea routes between Rumania and Germany in September 1939—and since June 1940 largely with Italy and the Northern Mediterranean coast—resulted in the transfer to the Danube or to the direct rail routes, of all traffic between Rumania and Germany, Italy and the rest of Europe. Owing to the closing of the Bucarest - Ploeşti - Cernăuţi - Lwow - Przemysl - Cracow-Silesia main line from September 1939 to December 1941 (except for a trickle of traffic for a few months) on account of the occupation of Eastern Poland by the U.S.S.R., the Bucarest-Ploeşti-Braşov-Copşa Mică-Teiuş-Cluj-Oradea or Teiuş-Arad-Curtici, and Ploeşti-Bucarest-Orşova-Timişoara lines were called upon to handle all this traffic. An exception was that sent via the Danube, which had to be rail-hauled to and from the Danube ports, particularly Giurgiu and Orşova. Oil has been, apart possibly from military movements, the most important single traffic; and, in general, German traffic has been sent via the Ploeşti-Teiuş-Oradea and Arad routes and Italian traffic via the Bucarest-Timişoara route.

From early in 1941 when the Germans began to move into the Balkans, first for the Yugoslav/Greek and then the Russian campaign, the Rumanian railways have had to carry in addition large numbers of troops and quantities of supplies. During the Yugoslav campaign when all routes to Greece and Bulgaria via this latter country were closed, the only all-rail route (apart from ferries over the Danube) into Bulgaria was that via the Cernavodă Bridge and the Dobruja. Rumania served an important rôle as a base for the attack on the Ukraine, and as the German front moved eastwards the Bucarest-Ploeşti-Buzău-Cernăuţi, Buzau-Galaţi-Teghina and Bucarest-Constanţa lines became important as supply routes to the Eastern Front.

2. New Construction and Improvements of the Railway System

499 The lines, which with the exception of the Bucarest-Ploeşti-Câmpina and Ploeşti-Buzău sec-

[41 a]

499 tions, were virtually all single track, were never designed or equipped to carry traffic on this scale. An elaborate programme of new construction and improvement works, certain features of which had been contemplated by the Rumanians for some years, was put in hand to increase the capacity of the various routes. On the routes to the west, the doubling of the Câmpina-Braşov section was pressed forward rapidly and completed by January, 1941, and work is also reported to be in hand on the doubling of sections of the Braşov-Sighişoara-Copşa Mică-Teiuş line. On the routes to the east, the Ploeşti-Buzău double-track section has been extended as far as Adjud on the Cernăuţi line and N. Filipescu on the Galaţi-Tighina line. In addition, extra sidings and new passing loops have been built, and improved signalling and telegraph and telephone circuits have been installed to increase the capacity of the single-track sections. A considerable mileage of line has also been relaid with heavier rails to permit of the use of more powerful locomotives. Work is also in hand on the construction of a number of new lines, including a new line 202 km. (125 miles) long from Bucarest via Videle-Roşiori-Caracal to Craiova, to shorten and relieve the existing route via Piteşti; new lines from Bumbeşti to Livăseni and Deva to Vlaicău; a new line from Ploeşti to Târgoviste and certain new routes in Bessarabia. Work on several of these lines is understood to be well advanced, and the Bumbeşti-Livăseni and Bucarest-Caracal-Craiova lines are, according to the latest evidence, likely to be completed in the autumn of 1943. Also the long-projected train-ferry between Giurgiu and Ruse was finally brought into use in June, 1941.

497 722 In spite of the relief granted by these improvements, the heavy volume of oil, military and other urgent traffic could be worked only by severe restrictions on ordinary passenger and freight traffic. The restrictions have inevitably varied from time to time and been most severe during periods of heavy military movements and during the winter when the weather has made operating difficult. Passenger-train services are more or less on a skeleton basis, and are at about one-third of pre-war level; yet the principal long-distance trains still carry restaurant and sleeping-cars. Certain restrictions ahve been imposed on travel and the restrictions on freight traffic have had serious economic consequences, particularly on the distribution of firewood. The shortage of locomotives and wagons, particularly since the recovery of Bessarabia and Northern-Bucovina and the taking over of Transnistria, has been acute. In the early part of the war the tank-wagon position was very difficult, but this has been eased by the construction of new vehicles by Germany, and by German requisitioning of wagons from the occupied countries; but apart from this the wagon position has been continually difficult, though a factor of considerable assistance has been that many of the military and supply movements have been into or through Rumania from Germany, and in consequence the Rumanian State Railways have not had to supply the wagons for these trains. The locomotive position has been met by the transfer of locomotives into Rumania by Germany; in addition to German locomotives, requisitioned French locomotives are said to be stationed at various sheds in Rumania.

The Rumanian State Railways are now in an anomalous position. Although a large programme of new construction and improvements has been carried out, heavy claims are being made on the system by Axis war traffic, with the result that the facilities available for ordinary commercial traffic

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497 722 and for passenger travel are severely limited. However, unless there is severe destruction in the later stages of the war, in the long run the Rumanians are bound to benefit from the capital investment in railways, and from the new construction and improvements which have been carried out to meet Axis needs. These improvements though planned long ago, could never have been carried out with the limited financial and technical resources previously available, and could not have been executed so quickly but for German assistance.

B. ROADS

491 Rumania's road system was, by Western European standards, very poorly developed before the war, there being only one International motor road which formed the continuation of the route from Hungary via Oradea Mare—Cluj—Sibiu—Braşov—Bucarest—Giurgiu and a branch line Bucarest—Olenița. Apart from this one major road, the system consists of untarred roads, many of which are in a poor state of repair.

The total length of the road system was reported early in 1943 to be 82,098 km. (51,010 miles), with only 12 per cent. in good state of repair, 22 per cent. being mediocre and the remainder in bad condition. Ownership of the total network is divided as follows:—

State roads	.. 11,465 km.	(7,118 miles)
Provincial roads	.. 26,181 km.	(16,272 miles)
Communal roads	.. 44,452 km.	(27,620 miles)

in 1936 there were some 34,000 cars registered.

The development of the road system has long been the dream of Rumanian propagandists, particularly as a stimulus to tourist traffic, but before the war no large-scale development could be embarked upon because of the lack of available capital.

499 Since the war, work has been started on an ambitious programme of road development, the objects of which are to improve communications between urban systems and to link the system with the International road network.

An Italo-Rumanian road company has started work on the Rumanian sector of one of the future trans-European roads, Trieste—Beograd—Turnu Severin—Bucarest—Constanța, while under a five-year plan, with an expenditure of 75 md. lei, some 5,000 km. (3,100 miles) of road are to be modernised with the help of German and Italian contractors.

C. SHIPPING

1. Introduction

505 439 A high percentage of Rumania's foreign trade is water-borne (55 per cent. in 1937), as not only is she situated on the Black Sea, but the Danube traverses the full west to east length of the country forming an important traffic route and link with Central Europe.

The following table shows comparative tonnages for sea and river traffic in 1937 and 1938:—

	1937	1938
	'000 *metric tons*	
Sea:		
Imports	622	540
Exports	6,918	5,222
River:		
Imports	1,890	1,568
Exports	3,161	2,688

As a result of the cutting-off of overseas markets since 1940 an increasing share of the country's

505 439 trade is carried on the Danube to European markets, Germany in particular, and, with the exception of an exceedingly limited traffic with Turkey, and a few intermittent shipments of oil to enemy ports in the Aegean Sea, Rumania's foreign sea-borne trade has been brought virtually to a standstill.

In addition to traffic in the Black Sea with U.S.S.R., Bulgarian and Turkish ports, Rumania in pre-war days had important commercial relations with most European and other countries overseas, the trade routes being via the Dardanelles, Mediterranean, Suez Canal and the Straits of Gibraltar.

2. Mercantile Marine

505 [652] All merchant-shipping activities are controlled by the Ministry of Air and Marine. Rumania's ocean-going mercantile marine in 1939 was constituted as follows:—

		G.R.T.
6	cargo and passenger motor vessels	27,061
16	cargo steamers	67,103
3	steam tankers	14,737
25	Total	108,991

[655] Of the 19 cargo steamers and tankers, 11 were oil-fired and 8 coal burners. Fourteen of these vessels were owned by the Rumanian State Maritime Service (*Serviciul Maritim Român*), the principal shipping company in Rumania, whilst the three tankers belonged to the Steaua Romana Petroleum Company of Bucarest. The remainder were privately owned.

[648] Consequent upon her entry into the war Rumania's mercantile marine came under Axis control and most of her vessels are trading for German and Italian account, partly in the Adriatic and Aegean, and partly in the Black Sea.

A statement of Rumania's estimated non-tanker merchant-shipping resources on the 30th April, 1943, follows:—

ESTIMATED RUMANIAN MERCANTILE MARINE RESOURCES (NON-TANKER) UNDER AXIS CONTROL IN THE MEDITERRANEAN AND BLACK SEA AT 30TH APRIL, 1943.

Tonnage Category	*No. of Vessels*	*Total G.R.T.*
100/499	3	578
500/999	—	—
1,000	2	2,798
2,000	2	4,986
3,000	3	10,170
4,000	—	—
5,000	2	11,395
6,000	3	20,220
Aggregate ..	15	50,147

[726] As to her tanker tonnage, two vessels aggregating 11,705 G.R.T. were seized and are now in Allied service, whilst the third, of 3,032 G.R.T., was sunk in December, 1941, in the Aegean Sea.

3. Ports

504 The chief ports for sea-going vessels are Constanța on the Black Sea and Brăila and Galați on the Danube, which both handle river shipping as well.

[42b]

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505 The following table shows the quantities of goods discharged and loaded at these ports in 1938 and 1939. Sea and river traffic at the ports of Braila and Galați are shown separately :—

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Ports	1938		1939	
	'000 metric tons		'000 metric tons	
	Discharged	Loaded	Discharged	Loaded
Constantza	192	3,046	137	3,456
Braila Sea	93	783	70	726
River	754	120	—	—
Galatz Sea	73	305	49	421
River	158	84	—	—

[43 b]

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(a) *Constanța*

Constanța, which is situated on the Black Sea and is Rumania's most modern port, is, in fact, her only port actually on the coast, and before the war was, therefore, of some considerable importance. Since the Russian campaign, however, its significance has dwindled enormously, due to the presence of Russian submarines in the Black Sea and to the curtailment of Rumania's overseas markets, which means that trade is mainly carried on the Danube and by rail.

Exports from Constanța consisted mainly of petroleum products which came by pipe-line from the Ploești district. A considerable portion of the country's general trade, including some cereal export, was also handled here.

[503] Heavy draught ships can anchor in Constanța harbour, but continued dredging is necessary inside the harbour to maintain the various depths. The estimated daily general-cargo discharging capacity of the port is about 7,200 tons. Total capacity for oil storage is about 660,000 tons at and in the vicinity of Constanța.

(b) *Brăila*

Braila, which is situated on the left bank of the Danube, is the normal limit of navigation on the Danube for ocean-going vessels. It is the principal port for grain export and is well equipped with grain-handling facilities, such as silos, elevators, etc. Small quantities of timber are also handled.

The width of the river channel at Brăila is normally 330 yards, though greater during the spring floods.

The estimated daily general-cargo discharging capacity is about 3,000 tons.

Grain is usually loaded into ocean-going vessels by floating elevators, the working capacity of which is estimated to be about 150 tons per hour under normal working conditions.

Total warehouse capacity of all the warehouses in the dock basin section for storing goods is 6,400 tons.

(c) *Galați*

[712] This port is also situated on the left bank of the river Danube and is the chief inland port of entry into Rumania, as well as being the headquarters of the Rumanian navy. It is the centre of the timber export trade, being situated just below the junction of the Siret River down which most of the wood from the Carpathians is floated. It is also well situated for the receipt of timber by rail from the Bucovina and from North Moldavia.

[43c]

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505 The estimated daily discharging capacity for general cargo is 7/8,000 tons, but it is, however, unlikely that this quantity (which is much greater than the normal traffic of the port) could be

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cleared without very considerable development. It is probable that not more than about 50 per cent. of the above capacity could be worked. Grain is loaded by land and floating elevators.

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The ports of Brăila and Galaţi are ice-bound during some winters, ice occurring to a sufficient extent to prevent navigation from the Black Sea between January and mid-March in about 3 years in 10.

D. INLAND WATERWAYS

I. General

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In 1937 navigable waterways totalled 2,840 km (1,766 miles) and were divided as follows :—

	Km.	*Miles*
Danube	1,075	668
Danube tributaries	395	246
Dniester .. .	740	460
Prut	410	255
Mureş	185	115
Bega Canal .. .	35	22

The rivers Dniester, Prut and Mureş have not been adequately regulated for regular traffic, but are used for local traffic and for timber floating.

II. The Danube

1. Traffic

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The Danube, Rumania's main traffic artery, carried about 60 per cent. of all import tonnage and some 15 per cent. of all exports in the years immediately before the war. Traffic is of two distinct types; first, the traffic in sea-going vessels with an average size of 2,000-2,500 tons proceeding as far as Galaţi and Brăila via the Sulina mouth, and second, on the river proper, on the Danube above Galaţi.

The sea-going traffic passing through the Sulina mouth in the years just before the war consisted of about 1·2—1·4 million tons a year of exports from Rumania or other riparian states. By far the most important items were grain and timber. About half the vessels entering the Danube from the sea appear to have been in ballast, the remainder bringing in some 300,000-500,000 tons of imports mainly for Rumania.

Inland-water traffic on the Rumanian sector of the Danube in 1930 (the latest year for which information for all kinds of traffic is available) amounted to 3 million tons. 1·6 million tons consisted of upstream traffic from Rumania to other riparian states, 0·24 million tons of downstream traffic to Rumania, about 1 million tons of Rumanian internal traffic, and about 0·2 million

[432]

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of transit traffic (mainly downstream). Traffic with other riparian states was apportioned as follows :—

	From Rumania	*To Rumania*
	'000 tons	
Germany	220	40
Austria	390	20
Czechoslovakia	440	30
Hungary	300	150
Yugoslavia	200	—
Bulgaria	80	3
	1,630	243

The composition of inland-water traffic has been fully analysed only at the Iron Gates, at the western end of the Danube's Rumanian course. In the traffic shown below, the upstream traffic consisted mainly of Rumanian exports, while the downstream traffic was made up of imports and transit traffic in approximately equal proportions.

Traffic in '000 metric tons at the Iron Gates :—

	1938	193[illegible]
	Upstream	
Total	1,362·5	1,864·[illegible]
of which (main items only) :		
Timber	20·1	11·[illegible]
Iron	21·1	13·4
Wheat	30·3	300·6
Barley	49·8	68·[illegible]
Maize	25·1	125·[illegible]
Petroleum and its products	787·7	1,048·1
Salt	30·8	31·7
	Downstream	
Total	489·3	771·2
of which (main items only) :		
Iron	77·2	22·2
Timber	67·6	56·5
Wheat	74·4	363·0
Maize and oats	79·6	28·2

Little is known about traffic since Rumania finally joined the Axis in 1941. As a whole, it is below pre-war level as a result of a great decrease in the amount of grain coming forward. This has been partly, but certainly not entirely, counterbalanced by a slight increase in oil traffic, by the probable diversion of rail traffic to the Danube and by military traffic. The most important individual traffics at the present time are as follows :—

(*a*) Oil shipments from Giurgiu (i) upstream to Italy (50-70,000 tons a month), to Germany (possibly 30-50,000 tons a month), and (ii) downstream to German forces in South Russia (quantity unknown, but may be substantial).

(*b*) Downstream supplies of (i) coal to Rumanian railways (part only of total supply), and of (ii) military equipment, stores, etc., to South Russia (quantities unknown).

(*c*) Upstream supplies of (i) some S. Russian products, including grain (perhaps 20,000 tons a month) and possibly iron and manganese ore (quantities unknown), as well as of (ii) some small quantities of Rumanian exports of agricultural products.

2. Navigation

The Iron Gate Sector of the Danube between Orsova and Turnu Severin, with its rapids and reefs causing violent currents, is particularly difficult for navigation, and the use of specially

133 502 trained pilots is compulsory, while the barge tows have to be broken up into smaller units. This sector of the Danube cannot be negotiated at night, which constitutes an enormous hindrance for large-scale traffic. In order to speed up the traffic, the use of suspension railways and locomotives on rails laid along the river bank was introduced before the war, but the system has met with only moderate success.

[503] Navigation in the Maritime sector of the Danube is affected by silting up—particularly in the autumn—and constant dredging has to be carried out in the Sulina branch to maintain sufficient depth for passage of vessels up to Galaţi. The depth of this sector was 24 ft. in 1939, permitting the entry of vessels of medium draught only. Danube navigation is held up for varying periods between November and March by ice, averaging 30-50 days, and occasionally even for 90 days.

499 There are no permanent bridges on the Danube to connect Rumania with Bulgaria. However, a Rumanian-Bulgarian Commission was established in 1942 to remedy this deficiency by arranging for the construction of a bridge, which will take five years to complete, between Giurgiu and Ruse. In the meantime a ferry system is in use between Giurgiu and Ruse carrying important supplies of oil for the German forces in Greece.

3. River Ports

503 504 There are in all some 38 river ports, of which the most important, all on the Danube (from west to east) are as follows :—

Moldova	Oltenița
Orșova	Brăila
Turnu Severin	Galați
Giurgiu	Sulina

Since the war started considerable improvements have already been made on the Danube. This is of special significance for, though this waterway is of little use for Rumanian internal traffic, since the closing of the sea route between Rumania and North Germany, it has become vitally important for the carrying of bulky transport. As early as 1940 a scheme for the rationisation of Danube traffic was put into operation, and the installations of Giurgiu, the main Danube port for oil transport, were improved.

To avoid congestion at Giurgiu, the Danube ports of New Moldova and Orșova have been enlarged. Internal traffic has been diverted to Oltenița, which is also used for the unloading of incoming traffic. The construction of new harbour installations is being carried out by a German-Rumania company.

4. Organisation of Inland Water Shipping

505 656 [555] Rumanian Danube shipping is under State control, and organisation is carried out by firms which are partly State-owned and partly owned by private individuals. The most important company is the State-owned "N.F.R." (*Navigațiunea Fluvială Română*), and of lesser importance are the privately owned companies "S.R.D." (*S.A.R. de Navigație pe Dunăre*) and "Sind" (*Società Italiana di Navigazione Danubiana*).

505 648 All Rumanian shipping companies are members of the Danube Shipping Pool, which is under German supervision, headed by the *Deutsche Donauschiffahrtsgruppe*, which is closely connected with the Hermann Goering-Werke für Binnenschiffahrt. The importance of the Danube Pool (exclusive of the Tanker Pool) will be realised when it is borne in mind that between 1932-1937 the freight carried annually by its vessels on the

505 Danube nearly doubled. The Rumanian river
648 traffic is now in fact under German control, which is enforced through a number of official and semi-official bodies. German transport officers operating in the main river ports are regulating all river shipping.

Working in close collaboration with the German railways and the *Frachtenstelle Südost*, Berlin (the office which controls river and sea navigation) the Rumanian authorities are bound to the orders given by this office, which must immediately receive reports of any transport exceeding 1,000 tons between Rumania and other countries. Oil transports are excepted as these are handled centrally by a special body which collaborates with the Rumanian Railway Administration and with the Danube Shipping Agencies.

5. The Inland Fleet

505 At the beginning of 1940, the Rumanian inland fleet consisted of the following craft :—

Passenger boats ..	25	
Tug boats ..	127	
Cargo barges ..	553	with a capacity of 469,546 tons
Tankers ..	66	with a capacity of 41,603 tons

Accurate figures of the Rumanian tonnage park have not been published recently, but press reports at the end of 1942 stated that shipping under the Rumanian flag on the Danube carried only 28 per cent. of Rumania's Danube traffic.

505 **III. Administration of the Danube**
648 Before the war the administration of the Danube was in the hands of two Commissions, the C.I.D. (International Danube Commission) in charge of the Danube from Brăila to Ulm, a distance of 2,417 km. (1,500 miles), and the C.E.D. (European Danube Commission) in charge of the Danube delta—i.e. from Brăila to the Black Sea—a distance of 171 km. (106 miles). Both these Commissions were established by the Treaty of Paris as long ago as 1856.

729 After the 1914-18 war, the two Commissions were reconstituted under the Treaty of Versailles, and the constitution, powers and functions of each laid down in Articles 331-836 and 346-353 of that Treaty.

C.I.D. (International Danube Commission)

Under the Treaty of Versailles this Commission was composed of the following riparian States :—

2 members from Bavaria and Württemburg.

1 each from Austria, Czechoslovakia, Hungary, Yugoslavia, Rumania and Bulgaria.

In addition, the three non-riparian members of the C.E.D., viz. Great Britain, France and Italy, were each allocated one representative.

This Commission was only a provisional one, intended to function pending the creation of a permanent regime. This was accomplished in July, 1921, and under the Statute of the 23rd July of that year, the Powers having representation were identical with those prescribed by the Versailles Treaty.

Article 1 of the Statute provides that the Danube from Ulm to the Black Sea must be free and open to all flags without any discrimination whatsoever. The functions and powers of the C.I.D. are laid down in Articles 9-42 and are concerned with the drawing up of programmes of improved works, the levying of customs dues, police regulations and the control of revenues resulting from customs and navigation dues.

[45a]

505 648 [651] It is a cardinal principle of the Statute that the customs dues levied on goods must not be higher than the duties levied at frontier stations of the country concerned. The cost of improvements was to be met by navigation dues, these being assessed on the tonnage of ships, and not based on the goods transported.

Bratislava was fixed as the Headquarters for the Commission for the first five years, and it was laid down that thereafter, for five-year periods, other Danube towns were to be selected in rotation.

Since the outbreak of this war, Germany has virtually controlled the Danube, has abolished the C.I.D., and set up the "Consulting Committee for Danube Affairs above Brăila."

C.E.D. (European Danube Commission)

[503] This Commission was constituted under the Treaty of Paris in 1856 with Austria, France, Great Britain, Prussia, Russia, Sardinia and Turkey as members, for the express purpose of dredging the mouths of the Danube below Isaccea, and leaving the various channels free from all obstructions to navigation. It was apparently expected that this preliminary task would take two years, and the life of the Commission was originally fixed for that period; but, by a series of later treaties, it was kept in being up to the outbreak of the Great War.

In 1918 the Central Powers set up their own Danube Commission, membership naturally being restricted to those Powers and their allies.

By the Treaty of Versailles the European Commission was reconstituted with Great Britain, France, Italy and Rumania as provisional members; and by the Convention of July 21st, 1921, was placed on a more permanent basis. The provisional membership of the four countries was confirmed and all the powers of the original Commission restored. A proviso added that any nation whose commercial interests in that part of the river warranted their being represented on the Commission could be admitted. In fact, no country was admitted under this proviso until the inclusion of Germany in August, 1938.

In August, 1938, an arrangement was signed at Sinaia relative to the exercise of the Powers of the C.E.D. In effect the Powers of the Commission were transferred to the Rumanian Government who were to set up a "Maritime Danube Board." This board, under Article 5, was "to be responsible for the preparation and execution of plans for works on the maritime Danube and at the mouths for levying dues and dispensing of the yield thereof."

In September, 1940, Germany summoned a conference at Vienna for the purpose of regulating Danube shipping anew, and eliminating Great Britain and France from membership of the Commission.

[113] [For further information see *La Commission Européenne du Danube et son Œuvre de 1856 à 1931* (Paris 1931); Treaty of Versailles, Articles 331-339, 346-353; Treaty Series No. 38 (1939) Cmd. 6068, and Treaty Series 38 (1939), Cmd. 6069.]

E. TELECOMMUNICATIONS

1. Pre-War Situation

1. Telegraph and Telephones

206 The telegraph system of Rumania was controlled by the Ministry of Communications, the telephone by the Societatea Română de Telefoane, a subsidiary of the International Telephone and

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CHAPTER VIII

206 Telegraph Co., of New York. The telegraph system covered the whole country, while the telephone was sufficiently extensive to supply about a quarter of the villages with official telephones, which were available for public use. The following figures (January 1940) show the comparative development of telegraph and telephone systems in Rumania and Great Britain :—

	Rumania	*Great Britain*
Number of telephones for every 100 of the population ..	·51	7·06
Miles of telegraph wire for every 100 of the population	·24	·5

After 1930, when the Societatea Română de Telefoane took over from the Government, the telephone system made remarkable progress. Just before the war about 74 per cent. of the subscribers were attached to automatic exchanges. 17 of the largest towns were equipped with these exchanges (Bucarest had two), material being supplied by the International Standard Company. Small towns and country districts had manual exchanges. The system in general was overhead wire, but there was an important 12-channel underground cable taking carrier from Bucarest to Ploești with extensions to Buzău and Brașov.

Bucarest had an extensive system of external telephone connections. It communicated with Berlin and Vienna, Soña and Ruse (Bulgaria), Paris, London, Athens, Warsaw, Prague, Istanbul, Belgrade and Budapest.

The telegraph system in Rumania covered the whole country but although not in as bad a condition as the telegraph system of Bulgaria, it suffered from being entirely divorced from the telephone system, and in 1937 it was proposed that it should be thoroughly reorganised. It is not known whether this reorganisation was ever carried out.

[46a]

206 Rumania was connected by telegraph to Prague, Istanbul, Odessa and Belgrade.

2. Submarine Cables

There was a submarine telegraph cable from Constanța to Kilvos, which was used on the Bucarest—Istanbul telegraph circuit.

3. Wireless.

207 Rumania was fairly well equipped with wireless stations, but after the Government took them over from "Air France," who originally installed them, their working became less efficient. At the beginning of the war there were three broadcasting stations, of which the most powerful was the Radio Rumania, a 150-kW station at Brașov; 14 wireless stations for civil airlines, and a number of radio beacons, government and commercial stations and police wireless stations.

II. War-time Developments

1. Telegraph and Telephones

206 722 It was reported in 1941 that the Germans had laid a telephone cable from Berlin to Bucarest through Czechoslovakia and Hungary.

2. Wireless

207 722 In May 1942 it was reported that the wireless headquarters in S.E. Europe for the "Lufthansa" was at Bucarest. Budapest, Venice, Rome, Belgrade, Zagreb and Sofia are all controlled from this headquarters. An internal Rumanian network for purely military purposes is also worked from Bucarest.

It was learnt in 1943 that there was a plan for the construction of four new medium-wave transmitters to replace existing stations. The new stations were to be at Iași and Timișoara and in Bucarest and Transylvania. A new 50-kW. short-wave transmitter for foreign broadcasts is also planned.

CHAPTER IX

FOREIGN TRADE

A. GENERAL

[162] 439 Although primarily an agricultural country since about 80 per cent. of her population is rural, Rumania has not been so dependent on the export of agricultural produce as a means of financing her imports as would be expected, oil and oil products having in the years immediately preceding the war accounted for as much as 40 per cent. of total exports.

From the following table it will be seen that the trade balance was consistently favourable from 1930 onwards :—

	Imports	*Exports*	*Balance*
	Million lei		
1929 ..	29,628	28,960	— 668
1930 ..	23,044	28,522	+ 5,478
1931 ..	15,755	22,197	+ 6,442
1932 ..	12,011	16,722	+ 4,711
1933 ..	11,742	14,171	+ 2,429
1934 ..	13,209	13,656	+ 447
1935 ..	10,848	16,756	+ 5,908
1936 ..	12,638	21,703	+ 9,066
1937 ..	20,285	31,568	+ 11,284
1938 ..	18,768	21,533	+ 2,765
1939 ..	22,890	26,809	+ 3,919
1940 ..	27,500	37,500	+ 10,000

This favourable trade balance was increased by the earnings of the marine and river fleets. Total earnings of the marine fleet were 110 million lei in

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1932, rising to 180 million in 1937 and 202 million in 1938, of which about two-thirds were derived from freightage. Total earnings of the river fleet were 74 million lei in 1932, 149 million in 1937 and 176 million in 1938. Pilotage through the Iron Gate rapids added another 47 million lei in 1938.

B. CHIEF IMPORTS AND THEIR SOURCES

Between 1921 and 1936 imports of the main deficiency commodities—textile fibres and their manufactures, iron and steel and manufactures thereof, machinery, other base metals and their manufactures, and vehicles, varied but little in their relationship to all imports, these five groups of commodities accounted for about 70 per cent. of the value of all imports.

By 1939, however, iron and steel had assumed chief importance, and these five classes now constituted 80 per cent. of all imports.

In the period 1937-9, when the trade of most of the world was declining, all these classes, with the exception of textiles, showed increased imports, an indication of the progressive industrialisation of the country.

The following table shows the major commodities imported in 1938 with their values, and a breakdown into main sub-classes with their leading sources, values and the shares of such trade for the most important countries :—

[47c]

16: Great Britain G-4 (no date) 1943 ED1 Rumania ED1

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Chief Commodities	Total value 1938 (Million lei)	Chief sources (value in million lei in brackets)
1. Iron and Steel	**4,060**	
Semi-manufactures	842	Germany (321); Hungary (150); Czechoslovakia (122); France (104); Belgium (80)
Tubes	524	Germany (163); Czechoslovakia (122); Hungary (120); France (62); U.K. (17); Belgium (17)
Tool steel	130	Czechoslovakia (80); Germany (47)
Scrap iron and steel	200	Holland (70); France (57); Belgium (30)
Ferro-alloys	51	Czechoslovakia (15); Germany (8); Poland (6); Yugoslavia (6)
Iron ore	34	Yugoslavia (34)
Manufactures	2,110	Czechoslovakia (668); Germany (605); U.K. (158); U.S.A. (80); Hungary (41); France (38); Sweden (32)
2. Textile Fibres and Manufactures	**3,731**	
Cotton yarn	1,184	Czechoslovakia (318); Germany (307); Italy (257); U.K. (213); France (60)
Raw cotton	897	Egypt (623); Turkey (148); U.K. (20); U.S.A. (20); Belgium (25)
Cotton piecegoods	240	Czechoslovakia (66); Germany (61); Italy (30); Switzerland (31); U.K. (16)
Wool yarn	393	Germany (257); Italy (73); Czechoslovakia (14); U.K. (6)
Wool, washed combed	340	France (149); U.K. (106); Belgium (73)
Wool, raw	23	Argentine (14); Australia (5); U.K. (3)
3. Machinery and Apparatus	**3,558**	
Industrial machinery	1,371	Germany (740); Czechoslovakia (242); U.S.A. (160); U.K. (111); Switzerland (40)
Machine tools	522	Germany (418); Belgium (36); Czechoslovakia (24); France (11); Switzerland (11)
Agricultural implements	242	Germany (123); Hungary (46); U.S.A. (40); Czechoslovakia (16)
Electro-technical apparatus	1,117	Germany (635); Belgium (113); U.K. (110); Hungary (73); France (50); Holland (35)
Engines, boilers, etc.	280	Germany (95); Switzerland (42); Hungary (36); U.S.A. (24); France (18)

[47d]

CHAPTER IX

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Chief Commodities	*Total value 1938 (Million lei)*	*Chief sources (value in million lei in brackets)*
4. Other Base Metals and Manufactures	**1,476**	
Copper, unwrought	264	Belgium (174); Yugoslavia (38), U.K. (23); U.S.A. (8)
Copper, scrap	41	U.K. (23); Belgium (13)
Copper manufactures	805	France (262); Belgium (205), Germany (126); U.K. (80)
Zinc, unwrought	53	Belgium (41); Poland (6)
Zinc, other	19	Germany (7), Belgium (3); Poland (3)
Tin, unwrought	48	U.K. (32); Belgium (5); France (5); U.S.A. (5)
Tin, other	9	U.K. (4); Germany (2)
Aluminium, unwrought	23	U.K. (8); Germany (8); France (3), Yugoslavia (2)
Aluminium, other	58	Germany (21); U.K. (13); Italy (9)
5. Vehicles	**1,456**	
Lorries	534	Germany (315); France (182)
Motor cars, private	297	U.S.A. (152); Germany (98); Belgium (30)
Motor car chassis	256	U.S.A. (125); Germany (59); Belgium (42); France (25)
Aircraft	142	Holland (40); U.S.A. (36); U.K. (27); Germany (26)
Motor car parts	94	U.S.A. (39); Germany (33), Belgium (9)
Bicycles	39	Germany (39)
6. Chemical Products	**620**	
Medicaments	269	Germany (182); France (38), Hungary (25); Switzerland (14)
For Textile Industry	34	Germany (22); Switzerland (11)
7. Fruit and Colonial Produce	**525**	
Citrus fruits	171	Palestine (90); Italy (46); Greece (20); Syria (15)
Olives	125	Greece (113); Turkey (12)
Coffee	84	Germany (27); U.K. (14); Denmark (13); Holland (12)
Cocoa	42	Denmark (37); Holland (2); U.K. (2)
Tea	22	U.K. (8); Holland (7); Denmark (2)
8. Rubber, Celluloid and other Vegetable Gums	**424**	
Rubber, raw	100	U.K. (67), Holland (15); Denmark (9)
Rubber manufactures	216	Germany (56); Italy (37); U.K. (28); U.S.A. (13)
Celluloid and manufactures	26	Germany (23)
Gums, etc.	54	Greece (26); France (8); U.K. (7)
9. Earth Stone and Manufactures	**380**	
Glass manufactures	99	Germany (74), Hungary (8), Czechoslovakia (5)
Pottery manufactures	93	Germany (57), Czechoslovakia (26); Hungary (6)
Refractory bricks	79	Germany (60); Czechoslovakia (18)
Coke	68	Germany (24); Poland (22); Czechoslovakia (22)
Coal	25	Turkey (10); Germany (7); U.K. (7)
Total of above classes	17,350 million lei, over 90 per cent. of *total imports* of 18,768 million lei.	

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10. Notes on Imports

1. *Iron and Steel and their Manufactures.*—In 1935 expenditure was merely 1·9 milliard lei, or 17 per cent. of all imports; by 1939, however, this proportion at 6·76 milliard lei had increased to 30 per cent. of all import trade. As a rule, Czechoslovakia and Germany each supplied about one-third of the total class; in 1939 France, Italy and Holland were of next importance as against the previous usual order of Hungary, France and U.K.

2. *Textile Fibres and Manufactures.*—Expenditure in this field declined heavily to 3·6 milliard lei in 1939 (21 per cent. of all imports) compared with 5·8 milliard lei in 1937 (20 per cent. of total import trade).

Raw materials constituted one-third of the whole

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class and yarns more than one-half. Of the raw materials, cotton accounted for about two-thirds and wool one-quarter, while of the yarns two-thirds were cotton and less than one-quarter was woollen.

The import of piecegoods was small by comparison with the rest of the class, reflecting the growing importance of the weaving industry to the country.

3. With a short interval from 1930 to 1932 values of imported *machinery* increased progressively up to 1939, when a record payment of 4·3 milliard lei was made. The proportion of such purchases to total imports had remained about 19 per cent for many years. Normally industrial machinery constituted two-fifths of the whole

[48 c]

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class, electro-technical apparatus one-third and machine-tools one-seventh.

Germany provided 60 per cent. and Czechoslovakia 8 per cent. up to 1939, when Germany's share increased to 66 per cent. and Czechoslovakia's fell to 5 per cent.

4. *Base Metals other than Iron and Steel*.—In 1934 a progressive demand began which reached 1·7 milliard lei in 1939; throughout the period between 7 per cent. and 8 per cent. of all imports were of this class.

Three-quarters of this trade was in copper in all forms. Belgium provided one-third, France one-fifth, U.K. one-eighth and Germany one-tenth.

5. *Vehicles*.—In 1937 imports were valued at ·9 milliard lei, four times higher than in 1933; in 1939 they were eight times as high at 1·8 milliard lei. The most spectacular increase was in heavy motor transport vehicles which leapt from ·08 milliard to ·90 milliard lei between 1937 and 1938.

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Normally the field had been shared by Germany with 40 per cent., U.S.A. 25 per cent. and France 17 per cent. In 1919, however, Czechoslovakia and Germany each provided 33 per cent., U.S.A. 17 per cent. and France nearly 10 per cent.

C. CHIEF EXPORTS AND THEIR DESTINATIONS

From 1921 to 1927 cereals were by far the most important export, rising steadily from 4 milliard to 20 milliard lei. Only once in the following years i.e. in 1932, did cereal exports exceed in value those of petroleum and its products, which lately averaged over 40 per cent. of total exports.

In the early years after the last war timber ranked second among exports, but the development of the petroleum industry lowered it to third. The other classes in the following table have not changed in relative importance for many years.

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Chief Commodities	Total imports 1938 (Millions £)	Chief destinations (figures in millions of £ in brackets)
1. Materials for Heat, Light, etc.	**9,313**	
Benzine	4,401	Germany (1,852), France (566), U.K. (555), Czechoslovakia (350), Spain (255), Switzerland (210), Belgium (152), Hungary (30), Greece (125), Italy (124), Tunis (122)
Kerosene	1,728	Germany (206), U.K. (204), Egypt (202), Italy (112), Hungary (102), Czechoslovakia (62)
Gas oil	1,377	U.K. (238), Italy (211), Greece (18), Germany (173), Egypt (143), Turkey (36), Yugoslavia (28)
Mazout	1,030	Italy (334), Germany (166), Hungary (53), Egypt (152), Spain (40), Greece (?)
Crude petroleum	535	Czechoslovakia (128), Italy (118), Hungary (65), France (54), Yugoslavia (47)
2. Cereals and Pulses	**5,258**	
Wheat	3,337	Germany (1,160), Czechoslovakia (503), U.K. (420), Greece (422), Belgium (215), Switzerland (104), France (88), Spain (80), Holland (78), Gibraltar (75)
Maize	827	U.K. (160), Greece (166), Germany (122), Czechoslovakia (88), Holland (57), Belgium (56)
Barley	638	Germany (530), Greece (42), Switzerland (22)
Pulses	287	Germany (55), France (5), Greece (20), Belgium (25), Italy (22), U.K. (22)
3. Timber	**2,465**	
Constructional timber	1,940	Germany (432), Hungary (42%), Greece (240), Egypt (234), Palestine (118), Syria (105), Turkey (62), U.K. (53), U.S.A. (40), Italy (37), Cyprus (28), Czechoslovakia (20)
Boxes, cases, etc.	162	Palestine (151), Cyprus (7)
Firewood	125	Hungary (88), Germany (23), Italy (?)
4. Livestock	**1,221**	
Swine	795	Germany (476), Czechoslovakia (90), Greece (108), Italy (?)
Cattle (all kinds)	208	Greece (112), Palestine (11), Italy (10), Germany (27)
Poultry	70	Germany (?), Palestine (27), Italy (?)
Horses	40	Germany (27), Czechoslovakia (?)
5. Seeds	**1,098**	
Clover, vetch, etc.	148	Germany (102), Belgium (17), Denmark (11)
Sunflower	216	Italy (?), Czechoslovakia (?), Holland (?), Poland (?)
Colza, rape	169	Italy (?), Czechoslovakia (42), U.K. (15), Germany (5)
Pumpkin	75	Italy (?), Germany (23), Poland (11)
Other oilseeds	463	Germany (402), France (22), Czechoslovakia (18)

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RUMANIA:— IMPORTS & EXPORTS BY COMMODITIES

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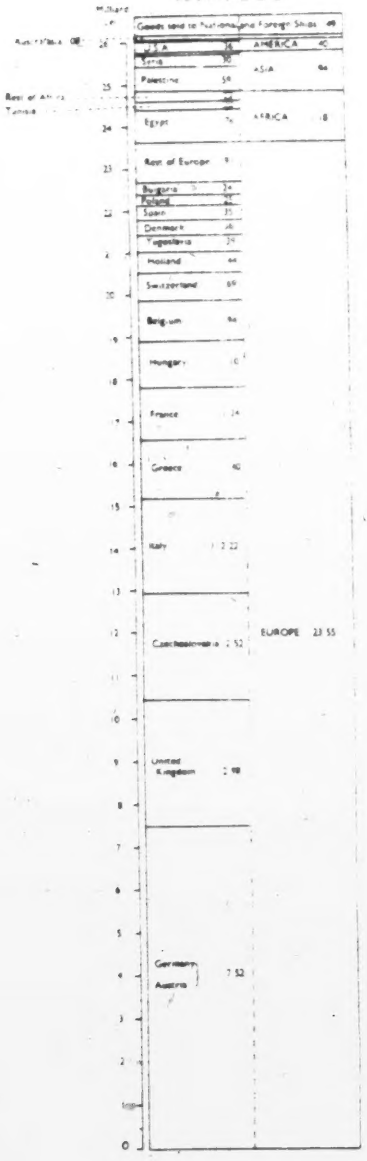

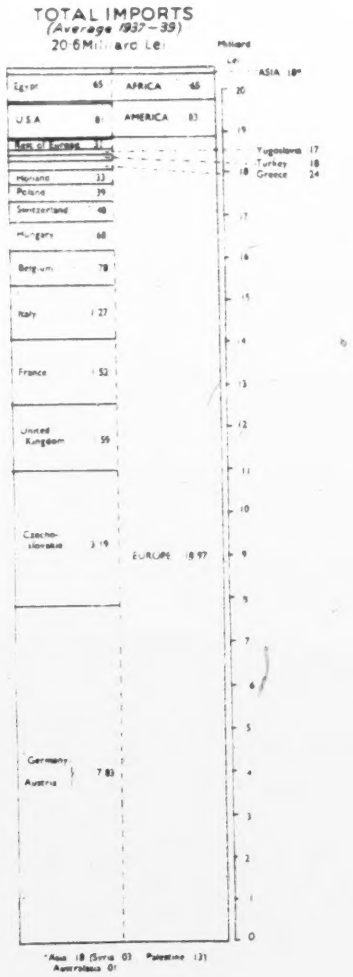

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Chief Commodities	*Total value 1938 (Million lei)*	*Chief destinations (value in million lei in brackets)*
6. Edible Animal Products ..	**638**	
Eggs	338	U.K. (317) ; Germany (19)
Fresh meat, mainly pork ..	49	Germany (40) ; Italy (5)
Meat, prepared, tinned, etc. ..	68	U.K. (29) ; U.S.A. (17) ; Czechoslovakia (13)
Poultry game, dead	151	Germany (66) ; Switzerland (57) ; U.K. (15)
Lard	28	Czechoslovakia (23) ; Germany (4
7. Fruit and Colonial Produce ..	**370**	
Nuts	217	Germany (123) ; U.K. (29) ; Poland (24) ; Czechoslovakia (17)
Pip fruits	96	Germany (56) ; Czechoslovakia (31)
Plums, all kinds	26	Germany (11) ; Poland (11)
8. Vegetables, Flowers, etc. ..	**361**	.. Denmark (148) ; Czechoslovakia (44) ; Germany (36) ; U.K. (24) ; Hungary (22)
9. Hides, Skins, etc.	**203**	
Sheep and goat, all qualities ..	176	.. U.S.A. (135) ; Poland (34)
Total of above classes ..	20,927 million lei, over 95 per cent. of *total exports* of 21,532 million lei	

[50 a]

10. Notes

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1. *Materials for Heat, Light, etc.*—Though only the most important consumers are shown in the table, nearly all European countries were purchasers.

2. *Cereals and Pulses.*—The figures for one year are but small guide to an export dependent upon harvests in buyers' and sellers' countries, but there never has been any doubt as to Rumania's importance as a European granary. Wheat was normally about one-half and maize one-sixth of the class, and Germany usually bought about one-third of the whole export, which lately ranged between 25 per cent. and 33 per cent. of all exports.

3. *Timber.*—This lost much of its importance between 1925 and 1933, when exports fell to 1 milliard lei. The recovery was gradual, though steady. Exports accounted in recent years for between 9 per cent. and 11 per cent. of total exports.

4. *Livestock* increased in value from 1.3 milliard lei in 1937 to 1.8 milliard in 1939, representing a rise from 4.2 per cent. to 6.7 per cent. of all exports. Pigs consistently composed half the class and cattle one quarter.

5. *Seeds* at 1.1 milliard lei in 1938 maintained the class at 5 per cent. of total export trade. Oilseeds represented three-quarters of the class and of these Germany bought more than half.

6. *Edible Animal Products* increased 50 per cent. in value from 1938 to 1939, reaching a total of 958 million lei, of which nearly one-half was eggs and one-quarter fresh meat (chiefly pork). While the sales of these two commodities were advancing year by year, those of poultry and lard steadily declined.

In 1939 Germany displaced U.K. as the best buyer.

D. WARTIME CHANGES

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Inclusion in the blockade area and consequent severance from former overseas markets has made Rumania increasingly dependent on Germany, both as a market for her exports and as a supplier of essential raw materials and machinery.

Rumania's export surplus has been very considerably reduced during the war period. The

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chief pre-war exports have all suffered. Agricultural produce particularly has been affected, as a result of poor harvests. The export of wheat and maize, which averaged a total of 1.32 million tons between 1935 and 1938, did not amount to 100,000 tons from the 1942 harvest. Timber exports, which ranked third before the war, have dwindled to less than 5 per cent. of the quantities exported in 1937 and 1938.

Oil exports now take first place, amounting to 63 per cent. of the 1940 total by value, though, due to reduced production, the total tonnage available is below that of the peak years immediately preceding the war.

Germany's participation in Rumania's foreign trade has increased from 23 per cent. in 1937 to 46 per cent. in 1940, and during 1941 and 1942 had increased to approximately 70 per cent. of both imports and exports. German exports, however, by no means balance her imports, so that there is an ever mounting clearing balance in Rumania's favour, which was reported to amount to 30 milliard lei in December, 1942, and which causes considerable anxiety in Rumanian financial circles. However, in June 1942 an agreement was signed between the two countries by which war essential trade has to be maintained irrespective of the state of the clearing.

The chief products imported from Germany are agricultural and other machinery, iron and steel semi-manufactured and finished products, and chemicals.

Oil has become Rumania's principal export to Germany, representing in 1940 about 58 per cent. of the total value.

Italy takes second place in Rumania's foreign trade, accounting in 1941 for 11.8 per cent. of Rumanian exports and 16.1 per cent. of imports. Trade is regulated by agreements renewed annually, and petroleum products constitute the principal Rumanian export, other commodities being agricultural products and livestock, both in small quantities. Italian exports in return include textiles, sulphur, fruit and military supplies.

Trade with other European countries has been on a very reduced scale. Agreements were concluded with Slovakia, Portugal, Sweden, Switzerland, Turkey, Bulgaria, Croatia, Denmark and Finland, the exchanges following obvious lines.

[50 c]

RUMANIA — IMPORTS & EXPORTS BY COUNTRIES.

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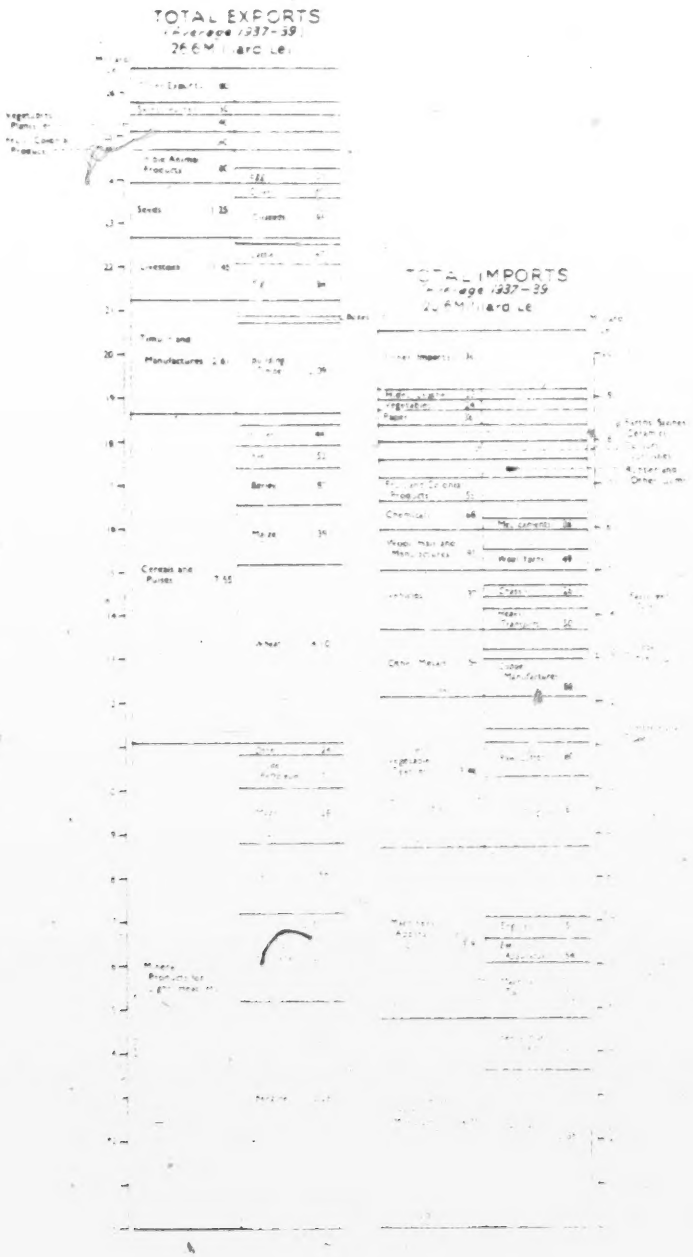

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16: Great Britain G-4 (no date) 1-43
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CHAPTER V

000 FINANCE

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A. PUBLIC FINANCE

The financial situation in Rumania during the 1930's was very like that of other south-east European countries being influenced by similar factors.

During the years of depression at the beginning of the period, the situation was dominated by the sharp fall in agricultural prices on the world markets, and the existence of a very considerable foreign debt—amounting in 1935 to about 80 per cent. of the total national debt, which amounted to 139 milliard lei in March of that year.

After 1935, however, when prices began to rise, and various agreements had been reached with creditor countries regarding the service of the foreign debt, a distinct improvement was noticeable, which continued until the outbreak of war, when the heavy expenditure necessary for the maintenance of the armed forces on active service once again strained the financial resources of the country to the utmost.

1. The Budget in Pre-War Years

The budget years from 1930 to 1934/35 inclusive all showed heavy deficits, the largest being registered in 1931 and 1933/34.

In 1935/36 expenditure on the ordinary budget amounted to 20.7 milliard lei, and on the special national defence budget to 1.9 milliard lei—giving a total expenditure of 22.6 milliard lei, as against revenue of 23.09 milliard lei. It was, however, the practice to grant certain credits outside the budget, which, in so far as budget surpluses were insufficient, were covered by borrowing.

The main single items of expenditure in the ordinary budget were the Ministry of Finance (including the debt service), the Ministry of Defence (excluding the special national defence budget), and the Ministry of Education and Culture, accounting for approximately 35 per cent., 23 per cent. and 20 per cent. respectively of the total expenditure.

Expenditure on National Defence amounted to 30 per cent. of the combined total of the ordinary and National Defence Budgets.

By far the greater part of expenditure was covered by normal resources. Indirect taxes, customs duties and stamp and registration duties accounted for approximately 40 per cent. of the total revenue, profits from State monopolies and State enterprises 25 per cent. and direct taxes 15 per cent., the remainder being supplied by other administrative revenue and special resources.

By 1938/39 expenditure on the ordinary budget and the special National Defence budget (excluding any extra budgetary credits in respect of which there is no information) had risen to about 34 milliard lei—with expenditure on National Defence still accounting for some 30 per cent. of the total. In the same year total revenue amounted to approximately 35.5 milliard lei, of which some 45 per cent. came from indirect taxes, 17 per cent. from profits from State monopolies and enterprises, and 25 per cent. from direct taxes.

From March 1935 to March 1939 while the foreign debt dropped by 45 milliard lei, the domestic debt rose by 16.1 milliard lei—from 24.7 milliard lei to 40.8 milliard lei. This rise was

652 largely due, first, to the conversion in 1937, of the foreign debt held by Rumanian nationals into domestic debt, and, secondly, to credits granted outside the budget and not covered by normal revenue. The drop in the foreign debt, while partly due to this conversion, was mainly due to the fact that war debts were excluded from the total.

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2. Expenditure in Wartime

After the outbreak of war, expenditure—particularly that on national defence—continued to rise. In 1941/42 a technical change was made in the budgetary system; instead of including profits from State enterprises in the ordinary budget a separate budget was published for State enterprises. Thus expenditure was divided into three categories, (1) the ordinary budget, (2) the special national defence budget and (3) budget for State enterprises. In addition in 1942/43 and 1943/44 separate budgets were published for Bessarabia and Bucovina.

The following table shows the budget estimates for expenditure on these four accounts for the budget-years from 1941/42 to 1943/44.

milliard lei

	1941/42	1942/43	1943/44
Ordinary budget ..	44.9	72.5	88
Special National Defence budget ..	16.0	21.0	84
Budget for State Enterprises ..	55.0	113.0	192
Budget for Bessarabia and Bucovina ..	—	6.0	10
Total ..	116.0	212.5	374

The first nine months of the Russian war fell in the Budget year 1941/42. Actual expenditure in that year was 74 milliard lei higher than the estimates, since 90 milliard instead of 16 milliard lei was spent on the special national defence budget and 12.5 milliard from the ordinary budget was allocated to Defence. Thus published expenditure on national defence accounted for over 75 per cent. of all budgetary expenditure (excluding that on State enterprises) as against 30 per cent. in 1938/39.

It is officially stated that in 1941/42 slightly over 50 per cent. of all expenditure was covered by normal resources, and the remainder by loans.

Since the outbreak of war the yield from taxation has increased, partly as a result of inflationary conditions, and partly as a result of increased rates of taxation and the imposition of new taxes.

The burden of taxation was, however, already so heavy that an increase sufficient to cover expenditure could not be achieved and large scale borrowing became necessary.

3. Government Borrowing during the War

Early in 1941 a "Reintegration Loan" with no fixed limit for subscription was issued. It was in two parts, the one bearing 4½ per cent. interest and maturing in 30 years, the other—designed principally for agriculturalists—bearing 5 per cent. interest with 5 years' maturity. Despite the various attractions offered (freedom from taxation on interest, premiums, etc.) the response to this loan was very poor. The final date for subscriptions was repeatedly postponed, in September,

CHAPTER X

652 722 1941, subscriptions were made compulsorily, and in 1942 a Reintegration Tax was levied on all persons who failed to subscribe the amounts allotted to them. In spite of all this the loan had only raised some 18 milliard lei by September, 1942.

A further attempt to borrow from the public was made at the end of 1942, when the Minister of Finance was authorised to issue short term 4 per cent. Treasury Bills to a value not exceeding 10 milliard lei. As with the long term loan, interest from this loan was free from taxation.

In spite of these measures, however, considerable amounts have had to be borrowed direct from the National Bank—partly on account of extra-budgetary credits for non-military purposes, but more especially to finance the war with Russia which—at the beginning at least—was done entirely outside the budget.

In June 1941 when miscellaneous advances to the Government already amounted to 10 milliard lei, the National Bank was authorised to derogate from the provisions of its statutes and to advance any amounts necessary to cover exceptional needs. In this way a further 12 milliard lei credit on this account was put at the disposal of the Government to finance the Russian war. This credit was, however, exhausted by January 1942, but the National Bank's miscellaneous advances continued to rise, reaching nearly 30 milliard lei by June 1942. After June 1942, borrowing on this account fell considerably, only to rise at the end of the year and the beginning of 1943.

4. External Position of the Leu

652 Rumania is still officially on the gold standard, the parity of the leu having been fixed in 1929 at 1 leu=0.009 g. fine gold or 111.111 lei per kg. gold.

This parity has, however, no practical significance, since from 1935 onwards it has been the practice to pay premiums for gold over and above the official price. In order to encourage domestic production of gold additional premiums are paid to domestic gold producers, so that the effective internal price of gold varies, according to the productivity of the mine, from 400,300 lei to 967,500 lei per kg. fine gold. (*See* also section on gold, page 23.) Official dealing in "hard" currencies, too, is done not at parity but at parity plus a premium. From December 1935 to February 1940, the premiums were fixed at 38 per cent., from March 1940 to March 1941 at 107 per cent., and after the latter date at 90 per cent.

652 648 The last reduction of premiums from 107 per cent. to 90 per cent. was made under German pressure, on the grounds that the RM., on which no premium was paid, was undervalued in relation to "hard" currencies. And at the same time as the effective rates for such currencies were lowered (in the case of the $ from 211.65—217.97 to 187.60—196 lei per $); the RM. rate was raised from 50 lei=1 RM. to 60 lei=1 RM., at which level it has since remained.

5. Prices and Price Control

435 As a result of the world depression there was a severe fall in prices during the early 1930's. Both wholesale prices and the cost of living reached their lowest level in the years 1933 and 1934. In the following years there was a gradual recovery, which became increasingly marked after 1939.

The retail price index has increased during the war as follows:—

August, 1939	100.
January, 1940	116.6.

[52 a]

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June, 1940	137.1.
January, 1941	149.5.
June, 1941	190.9.
January, 1942	200.6.
June, 1942	306.9.
January, 1943	377.6.
March, 1943	403.9.

The less marked rise in 1942 was due principally to the fact that for the first 6 months of the year prices were almost stationary; in the autumn, however, indirect taxes were increased and prices once again rose steeply.

These percentages represent only increases in official prices; the cost of living is in fact considerably higher owing to the prevalence of the Black Market, where prices are very much in excess of the official limits.

The first attempts at price control were made almost immediately after the outbreak of war. In September 1939 an anti-profiteering law was passed, and in November of the same year an anti-speculation law followed, which fixed the maximum prices of all articles in general use and limited wholesalers' profits to 10 per cent. and retailers' to 12 per cent.

The regulations were further tightened up by the price control laws of March, 1941, and the sabotage law of October, 1940.

Control, however, remained largely ineffective, and in October 1941 a stabilisation law was passed. This law, which borrowed much from the existing German laws, laid down a general price stop. Maximum prices and wages were fixed at the level prevailing on 1st September, 1941, and alterations could be made only with the permission of the Minister of Economics.

In addition the State set up goods distribution centres which, among other functions, supervised producers' prices, profit margins and consumers' prices.

Since August 1942 the supervision of prices has been in the hands of a General Commissariat for Price Control, and the local offices subordinate to it. It is evident that corruption among price-control officials was by no means a negligible [661] factor in the very unsatisfactory development of the control system in general. In the autumn of 1942 it was announced that all existing price controllers were to be dismissed and replaced by members of the teaching, legal and literary professions.

B. BANKING

1. State and State-Controlled Banks

652 The National Bank of Rumania was set up in 403 1880 with a capital of 30 million lei, of which one-third was in the hands of the State. By 1929 this had been raised to 600 million lei. Under the present statute the State may not hold more than ten per cent. of the capital; the remaining ninety per cent. must be held by private shareholders. This bank has the sole right of note issue for the country.

From the end of 1930 to the end of 1938 the note circulation rose from 19·6 milliard lei to 34·9 milliard lei. In the next four years, however, the increase was very much greater as the following table shows:—

		Milliard lei
1939	January	34·1
	June	38·7
1940	January	48·4
	June	54·2
1941	January	65·7
	June	77·1
1942	January	95·0
	June	98·7
1943	January	117·0

[52 b]

652 453 This was largely due to the advances of the National Bank both to exporters with claims on the Rumanian-German clearing, and for the maintenance of German troops stationed in the country (see below).

Among the fairly numerous other State or State-controlled banks, two of the most important are the Central Savings Bank and the National Institute for Industrial Credit. This latter was founded in 1923, but its size and scope have been greatly extended since the outbreak of war, and it is now entrusted with the so-called "Rumanisation" of industry.

2. Commercial Banks

453 There are six important commercial banks in Rumania—viz., Banca Românească, Banca de Credit Român, Banca Commercială Română, Societatea Bancara Română, Banca Commerciala Italiana şi Română, Banca Chrissoveloni—and a fairly large number of other smaller banks. In the big banks there were considerable French, German, Italian and, to a lesser extent, British interests.

The position of the banks was very seriously affected by the collapse of the Österreichische Creditanstalt in 1931.

Between 1930 and 1934 current account deposits in commercial banks fell from 18·2 milliard lei to 7·9 milliard lei and time deposits from 35·1 milliard lei to 10·4 milliard lei, representing a 64 per cent. fall in total deposits. In subsequent years there was a recovery and now inflation contributes a large share to the further increase in deposits. Deposits in commercial banks with a capital of more than 60 milliard lei rose from 10·6 milliard lei at the end of 1934 to 28·8 milliard lei in August, 1942.

In May 1934 a law was passed affecting domestic and foreign banks operating in the country. According to this law a Supreme Banking Council was set up to supervise all banks; minimum capital was fixed according to the locality in which the bank operated; rates of interest were fixed, and conditions of liquidity laid down. This law is still in operation, but certain of its provisions have been relaxed since the outbreak of war—the first time in February 1942, and a second time early in 1943. The alterations principally concerned the proportions of deposits to capital—in each case the maximum limit for deposits being increased.

As a result of the activities of the Supreme Banking Council a large number of small banks has ceased to operate and the banking system in general has been put on a much sounder footing.

3. German Infiltration and Financial Exploitation

453 Apart from penetration into other branches of industry, there has been a considerable amount of 648 buying up of shares by Germans in Rumanian banks and insurance companies. Already before the war the Societatea Bancara Romana was controlled by the Dresdner Bank, while the Commerzbank and the Deutsche Bank had a minority holding in the Banca Commercială Română. This latter holding was increased in 1941 to 60 per cent., and in the same year the *Reichskreditgesellschaft* acquired a minority holding in the Banca de Credit Român, and the Berliner Handelsgesellschaft in the Banca Chrissoveloni. In 1942 the Bank der Deutschen Arbeit acquired a holding in the Bukarester Handelsbank. Thus, since the Banca Commerciala Italiana şi Romana is a subsidiary of the Banca Commerciala Milan, five out of the six important banks are to a greater or lesser extent Axis-controlled. In addition there are

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certain fairly important *Volksdeutsche* saving banks operating in Rumania.

In the case of insurance, too, German companies had considerable interests in Rumanian companies even before the war. These interests have been greatly increased, the most important acquisitions being a majority holding in the Dorna Vatra company acquired by Jauch und Hübener in 1941, a similar holding in the "Franco-Romana" taken over from French hands by the Nordstern Versicherungs A.G. in the same year, and a holding taken over from French hands by a Viennese company in the "Nationala" General Insurance Company—also in 1941.

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Though the great increases in budgetary expenditure since 1939 can be attributed indirectly to Germany, the chief instruments of German financial exploitation have taken the form of advances from the Rumanian National Bank for the maintenance of German troops in the country, and for the clearing (i.e. forcing the Rumanian National Bank to make advances to Rumanian exporters whose exports were not balanced by corresponding imports from Germany).

4. Advances for Maintenance of German Troops

It was originally agreed that 1 milliard lei per month should be advanced—against an equivalent RM. credit in Berlin—to the German troops in Rumania. In fact, however, the Germans drew sums in excess of this amount, and continued to do so even after the majority of troops had left the country.

In October 1941, therefore, the National Bank refused to grant any further advances of lei for the use of the German troops. The Germans, however, brought pressure to bear by refusing to honour Rumanian invoices for goods they had received, and by borrowing from the banks through the medium of the firms which they controlled. The situation appears to have remained unchanged until January 1942, when it seems that a new agreement was reached, the National Bank once again undertaking to advance a fixed monthly sum, and in addition to make up arrears in payment. It is reported that towards the end of 1942 the National Bank had advanced some 40 milliard lei on this account.

5. The German-Rumanian Clearing

In addition to this German debt there is a further one of probably at least equal magnitude which has accrued in the clearing.

Precise figures of the actual German clearing debt to Rumania are not available and estimates vary very greatly. The amount of the debt at the end of 1942 has been variously reported at anything between 30 milliard and 100 milliard lei.

It is, therefore, reasonable to assume a minimum clearing debt at the end of 1942 of 30 milliard lei, and a minimum total debt (clearing and advances in the National Bank to the German military authorities) of 70 milliard lei—or approximately £117,000,000.

It is, however, quite possible that there is some justification for the German claim to the effect that clearing and similar debts are not wholly indicative of German commercial practices, inasmuch as certain German exports are made against long-term credits which do not enter into the clearing until several years have elapsed. In the case of Rumania, Germany is known to have granted in recent years two credits of RM. 600 million each (36 milliard lei), but it is not known to what extent actual production for the German export market made it possible for Rumanian importers to utilise these facilities.

CHAPTER XI

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LABOUR

A. POPULATION

1. General

161 Before discussing the labour situation in Rumania, it is essential to point out that a number of substantial changes have taken place between 1939 and 1942. The results of all these are shown in the table below. The last official census (in 1930) showed the total population of Greater Rumania as 18,057,000. Allowing for natural increase, the population for 1939 was probably about 20,000,000.

161 728 In August 1940 the U.S.S.R. occupied Northern Bucovina and Bessarabia with a combined population of 3·67 million, while in July 1941 these areas were regained with a reduced population of 3·30 million, the reduction of ·37 million being due to Russian deportations.

In September 1940 Hungary acquired northern Transylvania, including the provinces of Crişana and Maramureş and a population of 2·75 million. This was followed by a further loss of the southern Dobruja to Bulgaria with a population of 0·38 million. Some 200,000 Germans were repatriated from eastern Rumania, mainly to Poland.

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728 the northern sections of Transylvania and Crişana to Hungary, though it should be noted that a considerable block of Rumanians, of whom over 200,000 have returned as refugees, were placed within Hungary by the new frontier. The German minority was little affected by the territorial changes, but some 200,000 from Eastern Rumania were "repatriated," mainly to Poland. The remaining 550,000 are situated chiefly in the Banat and in southern Transylvania. The Jewish population was distributed as follows :—

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Bessarabia and Bucovina	300,000
Moldavia	158,000
Muntenia	87,000
Transylvania, Crişana and Maramureş ..	180,000

(*See* paragraph on Jewish population on page 56.)

The Bulgarian minority has been returned to Bulgaria partly by the new frontier in the Dobruja and partly by the exchange of Bulgarian and Rumanian nationals which has taken place since 1940.

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TABLE SHOWING POPULATION CHANGES BETWEEN 1939-1942

	Losses	Gains	Population
Greater Rumania, 1930	—	—	20,000,000
U.S.S.R	3,670,000	3,300,000	—
Hungary	2,750,000	200,000	—
Bulgaria	380,000	—	—
Germany	200,000	—	—
Natural increase in population, 1939-December 1942	—	400,000	—
Totals	7,000,000	3,900,000	—
Population of Rumania, December, 1942	—	—	16,900,000

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2. Effect of the Population Changes on the Nationality Distribution

In 1930 only 72 per cent. of the total population was of Rumanian origin. The largest minority groups were Hungarians (8 per cent.) Germans (4 per cent.), Jews (4 per cent.), Ukrainians (3·2 per cent.) and Russians (2·3 per cent.).

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As a result of the territorial changes since 1930 over 85 per cent. of the population are now of Rumanian extraction, and there has been a change in the relative importance of the various minorities. The Hungarian minority has been largely reduced by the cession of the province of Maramureş and

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728 As a result of these changes it would appear that the largest minority groups are now the Germans, Russians and Ukrainians.

3. Occupational Distribution

162 There is no satisfactory official occupational breakdown. Though the 1930 census gives an industrial and commercial breakdown, figures for agriculture and other occupations are lacking. Using such official figures as are available combined with other unofficial information, the following occupational breakdown (column A) has been drawn up for 1939, taking into account increased industrialisation since 1930.

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	A	Per cent	B	C	Per cent
Working population	9,300,000	100	[illegible]	[illegible]	100
of which					
Agriculture	7,200,000	77·5	[illegible]	[illegible]	[illegible]
Industry and mining	758,000	8·1	[illegible]	[illegible]	[illegible]
Trade and commerce	378,000	4·1	[illegible]	[illegible]	[illegible]
Transport	180,000	1·9	[illegible]	[illegible]	[illegible]
Banking and administration	254,000	2·7	[illegible]	[illegible]	[illegible]
Others	530,000	5·7	[illegible]	[illegible]	[illegible]

Columns B and C are estimated for 1942. B allowing for population changes described above and C allowing for population changes described above and for the military mobilisation.

B. LABOUR POSITION DURING THE WAR

1. Military Conscription

701 The age limits for mobilisation are 19–50, while youths from 17–18 are liable for pre-military training.

During 1942 there have been several indications of the strain which further mobilisation was putting on Rumania's manpower; for example, in April 1942 the sentences on political prisoners were suspended and they were called into the army, while from July of that year onwards there has been a constant revision of previous exemptions and a tightening of control over the granting of leave and call-up. Military service, which previously had been obligatory for Rumanian citizens only, was made compulsory for all non-nationals* resident in the country, and further a decree was passed mobilising all Rumanians of military age resident abroad.

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It is calculated that it has never been possible for Rumania to have more than 800,000 men properly equipped under arms at one period. The actual strength of the army has fluctuated considerably during the last two years, as has the number on the eastern front, but a reasonable average figure would be 500,000, of which 200,000 on the eastern front.

727 Rumanian casualties are difficult to assess. 464 One estimate at the end of 1941 put casualties at 150,000, while total casualties up to May 1943 have been estimated at 350,000. Military mobilisation will probably have meant a loss of some 800,000 men to the general labour supply.

2. Recruitment for Germany

464 The recruitment of workers for Germany has 167 been on a small scale, which is not surprising, as Rumania's military contribution has been considerable, and the military mobilisation has already reduced the supply of labour needed for the Rumanian armament industry to a minimum. Such labour as might be available for export is unskilled and therefore of less value to Germany. The total number of Rumanian workers in Germany in December, 1942, was estimated at 14,000. Of these 10,000 were young Rumanians 18–19, who were recruited at the end of 1941 to be "trained" in German metallurgical factories. 1,000 are women employed as domestic servants, and the rest are mainly unskilled general workers.

3. Foreign Workers in Rumania

648 In addition to the German administrators and 463 directors, who are in certain of the key positions in Rumanian industry, there is also evidence of skilled German technicians in Rumanian armament factories. In 1942 there was a nucleus of the German Todt organisation, and Italian builders in the country.

727 About 40,000 ~~Russian prisoners~~ of war are employed, chiefly in agriculture, though also in mining and navvying work.

C. GENERAL LABOUR DEVELOPMENTS

464 In 1937 the average unemployment figure was 722 12,000. The dislocation of trade and industry on the outbreak of war temporarily caused a general increase of unemployment, which was rapidly absorbed by the military call-up and increased activity in the armaments industry. In March

* The German minority was already liable for military service, either in the Rumanian or German army and in December, 1942, it was announced that there were 30,000 *Volksdeutsche* in the Rumanian Army.

464 722 1941 there were 2,000 unemployed, while in December 1942, it was announced that the Office of Unemployment Statistics had been abolished, as there were no unemployed. Though Rumania's military mobilisation and losses have been extensive, her labour reserves are theoretically still considerable. On the other hand, there is no doubt that both industry and agriculture are suffering a noticeable labour shortage. This is attributable to the low level of mechanisation, internal economic organisation and to the cumbersome administration, so that comparison with western countries is impossible.

1. Agriculture.

464 241 The proportion of the working population engaged in agriculture is extremely high, so that military recruitment has been principally from this source. The structure of Rumanian agriculture, which is mainly peasant farming with a low output per head, has meant that the withdrawal of some 550,000 men has been more serious than it would have been in a country where more up-to-date methods are used, and the remaining labour supply is more mobile. The normal sources of supplementary wartime labour have been drawn on—*i.e.*, the temporary demobilisation of soldiers, employment of children during the summer holidays, and presumably an increased employment of women, although there is no evidence of women having been forcibly transferred to agriculture.

[727] The most valuable supplementary labour, however, has been the employment of Russian prisoners of war, and the demand for their services has exceeded the supply. The number employed in March 1942 was 40,000. These measures to improve the agricultural labour position do not as yet appear to have had much effect.

2. Industry

162 438 178 According to the latest official census figures (relating to the year 1930) 620,000 persons were employed in industry. The following table shows in column 1 the total number employed in the main branches, and in columns 2 and 3 the numbers working in factories employing ten or more people. A comparison between columns 2 and 3 gives an indication of the growing industrialisation of the country.

	1	2	3
	1930	1930	1937
Food	122,000	25,200	34,700
Textiles and Clothing	155,000	34,800	70,500
Metallurgy	101,000	32,000	49,500
Timber	94,000	31,000	44,000
Mining	53,000	n.a.	n.a.

Allowing for the increased industrialisation during the years 1930–39, and for the general increase in the total population to some 20,000,000, it is estimated that by 1939 the number of industrial workers in Greater Rumania would have risen to some 750,000.

With the loss of part of the provinces of Transylvania, Crişana and Maramureş, Rumania suffered a fairly considerable loss in industrial workers, so that added to the expulsion of Jews, repatriation of Germans, etc., and military mobilisation, it is estimated that at the end of [46A] 1942 the numbers engaged in industry would not exceed 550,000.

As in the case of agriculture, the structure of Rumanian industry tends to prevent a thorough rationalisation and concentration of the available industrial labour.

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CHAPTER XI

463 438 industrial labour. One-third of all workers engaged in industry are independent artisans, on whom the community is dependent for its services, but who do not play any important part in war production. In certain of the larger armament works German controllers have effected a considerable degree of rationalisation.

3. Mining

316 727 There is a shortage of miners; Russian prisoners of war have been employed in mining during 1942. Many miners were reported to have been included in the territory transferred to Hungary.

4. Armament Works

719 464 There is a general shortage of labour in metal and engineering factories, particularly of skilled labour. A 12-hour day was legalised at the beginning of 1942, but it is doubtful if in fact a 12-hour day is ever worked.

5. Timber

313 464 There is a shortage of labour, both for lumbering and for timber manufacture.

6. Textiles and Clothing

464 288 294 The total number of workers in these industries has probably fallen considerably, due to reduction of available raw materials. The delivery of supplies to individual mills seems to be somewhat erratic, and there is evidence of considerable part-time work: for instance in a survey of some 43 factories in December, 1942, 11 were working full time, 21 on a reduced scale and 11 at a very reduced scale.

7. Building

499 712 464 The extent of fortification building and general road and rail construction in Rumania is unknown, but in the second half of 1942 there was evidence of a scarcity of general labour for such projects, and of Russian prisoners of war working on rail construction.

438 464 [759] In the other branches of occupation: transport services, etc.: there is no evidence of labour shortage, apart from doctors, many of whom have been mobilised for the army.

D. CONTROL OF LABOUR

1. The Youth Labour Service

466 883 A youth labour service founded on the German model was established in March 1941. The leaders were trained in Germany, but it was only in April 1942 that the labour camps began to function. Youths are called up in their 19th–20th year and the period of service lasts 7 months.

(*See* Part II, Chapter V.B. for further details.)

2. Civil Mobilisation

466 A general civil mobilisation decree was passed in May 1942 by which (1) employment cards were introduced; (2) men and women aged 20-57 were liable to compulsory employment if not employed.

Two subsequent decrees were published in March and May 1943, one for the reorganisation of agriculture, forestry and fishing, and the second for the reorganisation of industry. Each of these decrees gave full powers to the appropriate authorities for the mobilisation and transfer of labour.

In addition to the general labour decrees which have so far had little influence on the labour situation there have been regional decrees applying to individual localities, e.g. in Bessarabia in February 1942 all the inhabitants aged 12-70 were called upon for compulsory agricultural labour unless already employed.

E. THE JEWISH POPULATION

162 The Jewish population of Rumania for 1938 is given as 800,000, and for July, 1942, as 270,000. This reduction came about as follows :—

Total, 1938	800,000
Lost to Hungary	200,000
[728] Taken to Russia from Bessarabia and Bucovina by Russians	130,000
Expelled from Bessarabia and other areas by Rumanians to Transnistria, and deaths from unnatural [661] causes in Rumania	200,000
Total losses	530,000
Total, 1942	270,000

The occupational distribution of the Jews in 1930 :—

	Per cent.	
Agriculture	4·1	
Industry and trade	32·8	81·1
Commerce and credit	48·3	
Transport	3·4	
Professions and Public Services ..	2·7	
Army	1·9	
Miscellaneous	7·8	

It is calculated that in 1939 at least one-sixth of the industrial and half of the commercial population were Jews. During the war Rumanian policy 563 has been to exclude Jews from business and from 661 commercial and professional activity. This process of Rumanisation, while pursued ruthlessly in the provinces of Bessarabia and Bucovina, has been limited in the more industrial areas such as Bucarest by the simple fact that Rumanian industry and trade are dependent to such an extent on Jewish capital and leadership, and there is no doubt that the shortage of labour in industry has been seriously aggravated by the anti-Jewish policy. The degree of Rumanisation so far achieved is given by the following examples :—

Bucarest :—
Number of firms employing Jews, November 1940 8,126
Number of firms employing Jews, December 1942 4,301

Such Jews as are deemed necessary for war production are granted labour permits, whereby they may remain in their profession, but are subject to heavy taxation. Jews who are expelled from their normal activity are compulsorily enrolled in the Jewish labour service and employed chiefly on road work, or, alternatively, they are sent to concentration camps.

(*See* also "Note on Jews in Rumania," Part II, Chapter VIII.)

F. WAGES

1. General

465 The average wage (industrial, commercial and agricultural professions) in 1938 was 1,853 lei per month. The highest average wages were found in the mining, food and transport industries, followed by commerce, textiles, skins, glass and stone, while in the metallurgical industry wages were below the average. The most noticeable feature of pre-war Rumanian wage statistics is the great regional variations, the extreme averages being 889 and 3,059 lei per month.

During the war, various attempts at fixing the wage level have failed to keep pace with the rising cost of living. On the whole it would have been surprising if a wage stop could have been successfully applied in Rumania, because of the great

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465 discrepancy in wage levels throughout the country which would involve separate wage boards for each area. All the fixed rates quoted below, with the exception of those in the metallurgical trade, are given for the country as a whole. In view of the regional variations in wage rates, the application of a fixed uniform wage is obviously impossible. This therefore suggests that the given rates are intended to apply to the districts with the highest wage-rate level, and that suitable reductions will be made in other areas, as for the metallurgical industry. The general wage level is estimated to have risen by as much as 200 per cent. since 1939. A general decree in August, 1942, fixed minimum wages at (lei per month) :—

Men	*Women*	*Children*
5,100	3,800	2,300

2. Agriculture

465 241 Up till April 1942 agricultural wages were determined by free negotiation in the different regions and showed great variations. In April 1942 a decree was passed fixing rates for hired labour. A margin of 10 per cent. was granted to allow for local cost of living differences. The following rates (in lei per day) were fixed for the

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different seasons in 1942, the employee also receiving food :—

Period	*Men*	*Women*	*Juveniles**
Spring—June 15th	75	50	40
Summer—Sept. 1st	100	75	50
Autumn and winter	60	40	30
Average for 1937†	40	32	21

(i.e. official money wages have almost doubled and food is now supplied.)

* 14-18 years † Without food.

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3. Civil Service

In August, 1941, the average monthly wage for a civil servant was 2,200-4,000 lei (presumably for non-administrative grades). Beyond this there is no information on actual rates paid, except for a reference in December 1942 to "Ministry Advisers," whose wages were 72,000 lei per month. However, there are frequent references to increased wages for state officials, and especially of increased family allowances, e.g. in October 1941 the allowance per month for children of civil servants was 500 lei per child. By October 1942 it had been increased to 750 lei per child for families living in the country, and 1,000 lei per child for families living in the town.

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SUMMARY OF AVAILABLE INFORMATION ON INDUSTRIAL WAGES

Date	Industry	Category of Worker	Wage	Remarks
			Lei per month	
August 1942	General	Skilled	4,100–5,100	See remarks on variations of the "general wage"
		Unskilled	2,300–2,800	
			Lei per hour	
October 1942	Metallurgy	Skilled (2 years' employment after training)	30–75	Industrial areas were divided into four classes, according to their cost of living and general wage level. The given wages are for class I, i.e. with highest cost of living. Class II = 4 per cent. less; class III = 12 per cent. less; class IV = 20 per cent. less
		Industrial (over 21)	28–42	
		Unskilled (over 18)	26–32	
		Women	20 per cent. less in each category	
			Lei per month (fixed minimum)	
December 1942	Textiles	Men	5,100	
		Women	3,825	
		Juveniles (14–18)	2,550	
			Lei per hour — *Women*	
December 1942	Oil	"Master" men	50–122 — 40	
		Specialised workers, men	34–98 — 28	
		Industrial workers, men	28–65 — 22	
		Industrial workers (under 18)	22–40 — 18	
		Unskilled workers, men	26–47 — 21	
		Unskilled workers (under 18)	21–36 — 17	
			Lei per day	
October 1942	Building	Master stonework builder	600	
		Labourer	400	
		Youth	200	
		Master joiner or carpenter	600	
		Workman	400	

NOTE.—Of the above listed categories, wages for the textile industry doubled between 1939 and 1942; for general workers, metallurgy and the oil industry they trebled, and for building were quadrupled.